A STUDY TO EVALUATE THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE REGARDING LEARNING DISABILITIES OF SCHOOL CHILDREN (6-12 YEARS) AMONG TEACHERS IN A SELECTED SCHOOL AT ELAYAMPALAYAM, NAMAKKAL DISTRICT,

TAMIL NADU.

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CERTIFICATE

This is to certify that this thesis is titled **"A STUDY TO EVALUATE THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE REGARDING LEARNING DISABILITIES OF SCHOOL CHILDREN (6-12 YEARS) AMONG TEACHERS IN A SELECTED SCHOOL AT ELAYAMPALAYAM, NAMAKKAL DISTRICT, TAMIL NADU,"** submitted by **Mrs. REENA NINAN**, M.Sc Nursing (2010 – 2012 Batch) Vivekanandha College of Nursing in partial fulfillment of the degree of master science (Nursing) from the Tamil Nadu Dr. M.G.R Medical University is her original work carried out under our guidance.

This thesis or any part of it has not been previously submitted for any other degree or diploma.

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ANGAMMAL EDUCATIONAL TRUST, ELAYAMPALAYAM

DECLARATION

I hereby declare that this thesis entitled **"A STUDY TO EVALUATE THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE REGARDING LEARNING DISABILITIES OF SCHOOL CHILDREN (6-12 YEARA) AMONG TEACHERS IN A SELECTED SCHOOL AT ELAYAMPALAYAM, NAMAKKAL DISTRICT, TAMIL NADU,"** is the outcome of the original research work undertaken and carried out by me under the guidance and direct supervision of **Prof. R. Kanagavalli, M.sc.,(N), Ph.D.,** Principal, Vivekanandha College of Nursing , and specialty guide **Prof. L. Parimala Devi, M.Sc.,(N),** Department of Child Health Nursing, Vivekanandha College of Nursing (Sponsored by Angammal Educational Trust), Elayampalayam, Tiruchengode, Namakkal District.

I also declare that the material of this thesis has not formed in any way the basis for award of any other Degree, Diploma or Associate fellowship previously of the Tamil Nadu Dr. M.G.R Medical University.

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ABSTRACT

The thesis title **"A STUDY TO EVALUATE THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE REGARDING LEARNING DISABILITIES OF SCHOOL CHILDREN (6-12 YEARS) AMONG TEACHERS IN A SELECTED SCHOOL AT ELAYAMPALAM, NAMAKKAL DISTRICT, TAMIL NADU"** was conducted by **Mrs. REENA NINAN** in the partial fulfillment of the requirement for degree of Master Science (Nursing) during the year 2010 – 2012.

OBJECTIVES OF THE STUDY

- To assess the knowledge of school teachers regarding learning disabilities in school children.
- To administer self instruction module regarding learning disabilities.
- To assess the post test score after self instructional module.
- To compare pre-test and post-test knowledge score.
- To find out the relationship between pre-test knowledge score with selected socio demographic variables such as age, sex, religion, marital status, education, year of experience, previous knowledge, previous exposure, exposure to in-service education and duration of in-service education.

The conceptual framework adopted for this study was based on Stuffle Beam evaluation model.

The research approach adopted for the study is quasi- experimental in nature and one group pre- test and post- test method. The sample consists of 40 teachers teaching 6-12 years children in Vivekanandha Matriculation School, Elayampalayam. The instrument used for data collection was semi structured questionnaire. The reliability of the tool was r=0.99.

The collected data were analyzed and compared with various socio demographic variables using descriptive as well as inferential statistics in terms of frequencies, percentage, mean, mean percentage, standard deviation, paired “t” value and chi-square test.

SUMMARY OF MAJOR FINDINGS OF THE STUDY

Findings related to selected socio-demographic variables

- Among 40 teachers 19 (47.5%) were in the age below 30 years and 21 (52.5%) in the age above 30 years.
- Majority of the subjects 35 (87.5%) were females and 5(12.5%) were males.
- Out of 40 teachers 34 (85%) were Hindus and 6 (15%) were other religions.
- In this study 27 (67.5%) were married and 13(32.5%) were unmarried.

- Among 40 teachers 16 (40%) were completed PG with B.Ed and 24 (60%) were completed +2 with teacher training, UG with teacher training and PG with M.Ed and other courses.
- This study shows that 29 (72.5%) subjects had less than 5 years of experience and 11 (27.5%) had more than 5 years of experience.
- The majority 36 (90%) subjects had previous knowledge and 4(10%) did not have previous knowledge about learning disabilities.
- Out of 40 teachers, only 12(30%) were exposed to learning disabilities and majority 28 (70%) were not exposed to learning disabilities.
- 15 (37.5%) were attended in-service education whereas 25(62.5%) were not attended in-service education.
- Out of 15 had attended in-service education 4(26.6%) were attended less than two days programme and 11 (77.3%) were attended more than two days programme.

Findings related to effectiveness of self instructional module

The pre-test result shows that 38 (95%) of respondents had inadequate level of knowledge, 2(5%) had moderate level of knowledge and none of them had adequate knowledge level. In the post-test 37 (92.5%) had

adequate level of knowledge, 3(7.5%) had moderate level of knowledge and none of the teachers had inadequate knowledge level.

The pre- test mean knowledge score percentage was 32.73%. The post-test mean knowledge score percentage was 84.42%. The post-test mean knowledge score percentage was higher than pre-test knowledge score percentage. Self instructional module increased the knowledge of teachers regarding learning disabilities.

The paired‘t’ test was highly significant t= 34.6 ($p<0.05$) i.e. the intervention was very much effective in increasing knowledge of teachers regarding learning disabilities in school children.

Findings related to relation between socio-demographic variables and pre-test knowledge

The study also revealed that the pre-test knowledge and socio-demographic variables such as previous exposure, years of experience, in-service education were significantly associated. But per-test knowledge and demographic variables such as age, sex, religion, marital status, education, previous knowledge and duration of in-service education were not significantly associated.

The finding of the study provided guidelines for nursing practice, nursing education, nursing administration and further nursing research.

RECOMMENDATIONS

- The study can be replicated on large samples; thereby findings can be generalized to large population.
- A similar study can be conducted with a control group.
- A comparative study can be conducted in two different schools with similar setup.
- A descriptive study can be conducted among teachers regarding learning disabilities
- A similar study may be conducted using other teaching strategies.
- A study can be carried to assess the knowledge and attitude of parents regarding learning disabilities.
- A retrospective study can be conducted regarding causes of learning disabilities among students.

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CHAPTER – 1

INTRODUCTION

Learning is the beginning of wealth. Learning is the beginning of health. Learning is the beginning of spirituality. Searching and learning is where the **miracle process of all begins. –** ***Jim Rohn***

In modern society basic learning skills- reading, writing, arithmetic is very important pre requisites for success of academic, employment and social settings. Learning is acquiring new or modifying existing knowledge behavior, skills, values or preferences and may involve synthesizing different types of information. Learning difficulties and learning problems are often the first descriptive terms used when a child begins to have trouble in school. In some countries, it is used as a synonym for learning disabilities. However, learning disabilities are usually distinguished with learning difficulties being a broader term. Not all difficulties are learning disabilities. Children develop at different rates and sometimes what seems to be learning disability may resolve as the child matures. Importantly children who are language learners are sometimes misidentified as having learning disability, as these children are from impoverished backgrounds or with severe problems at home that impact their preparation for school or their behavior.

Human learning is a part of education, personal developmental school or training, it may be goal oriented or may be aided by motivation. Learning may occur consciously or without conscious awareness. There is evidence for a human behavior learning prenatally, in which habituation has been observed as early as 32 weeks into gestation, indicating that the central nervous system is sufficiently developed and primed for learning and memory to occur very early on in development.

The term ‘learning difficulty’ has been used when the children have greater difficulty in learning than the majority of their age. Children are unable to make use of the education facilities available in schools. People with learning difficulties can have problems with many every day learning activities. Reading, spelling and numeracy skills are basic to school achievement. Children with specific learning difficulties may show problems in all three areas or only one or two. Reading and spelling are closely associated skills and it is rare to find reading disabled children who are not at all handicapped in spelling. Most children are likely to be behind in all three areas, although there are occasional reports of subgroups showing rather more of one or the other deficit.

Play has been approached by several theorists as the form of learning children play, experiment with the world, learn the rules and learn to

interact. Vijyotsky agrees that play is pivotal for children's development, since they make meaning of their environment through play.

Learning disorder in a child is characterized by academic un achievement in reading, writing expression or mathematics in comparison with the overall intellectual ability of the child. Children with learning disorders often find it difficult to keep with their peers in certain academic subjects where as they excel in others learning disorders affect at least 5-10% of school children.

Learning disorders are caused by a difference in brain that affects how information is received, processed and communication is. So a child with learning disability are unable to do hard work, has less attention span and less self motivation and they need more assistance to learn how to carry out the works. A learning disability or learning disorder is not associated with intelligence.

Learning disabled children suffer from serious learning disabilities. These children exhibit exceptionally inferior qualities and capacities in terms of learning and understanding in comparison to the normal children of their or class. In fact learning disability is nothing but a sort of handicap or helplessness that can be felt by the suffers in terms of his academic performance in the same way as experienced by a physically handicapped

person in terms of his physical functioning or by a mentally handicapped in terms of his mental functioning.

In 1960’s learning disabilities came to use. The nature of the academic difficulties in learning disabled children is selective and specific.

Specific learning disability refers to a disorder in one or more of the basic psychological processes which helps in understanding or using language spoken or written, which may manifest itself as an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term involves such conditions as handicaps, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. The term does not include children with learning problem which are primarily the result of visual, hearing, or motor handicap, of mental retardation, emotional disturbance environmental cultural or economic disadvantage.

According to National joint committee, learning disability defines learning disabilities as a generic term refers to a heterogeneous group of disorder manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical ability. These disorders are intrinsic to individual presumed due to central nervous system dysfunction and may occur across life span. Problem in self regulatory behaviour, social perception and social interaction may exist with learning disability but do not by themselves constitute a learning disability.

Although learning disability may occur concurrently with other handicapping conditions such as impairment in sensory function, mentally disabled, social and emotional problems, environmental influence like cultural differences, insufficient or inappropriate instruction or economic disadvantages.

The association for children with learning disabilities USA (1967) states a child with learning disability is one with adequate mental activity, sensory processes and emotional stability who has a limited number of specific deficits in perceptual, integrative or expressive processes which severely impaired learning efficiency. This includes children who have central nervous system dysfunction which is expressed primarily in impaired learning efficiency.

S.A. Kirk (1971) describes the learning disability is not meant to be used for children with minor temporary difficulties in learning but with a severe discrepancies between ability and achievement in educational performance and such severed discrepancy described as learning disabilities with significant learning problems that cannot be explained by mental retardation, sensory impairment, emotional disturbance or lack of opportunity to learn.

Reading disability is the one of the most common learning disability. Reading disorders are present in 70-80% of children and adolescents with learning disabilities. Reading disability is characterized by an impaired

ability to recognize words, slow and inaccurate reading, and poor comprehension. In addition children with hyper activity disorder are at high risk for reading disorder.

Writing disorder means impaired ability in writing language may include impairment in hand writing, spelling, organization of ideas and composition. It is estimated to occur in 4% school children. These difficulties impaired the child's academic performance and writing in every life. Attention deficit hyperactivity disorders occur with great frequency in children with writing disorder than in the general population.

Math disability involves such difficulties as learning maths concept, difficulty memorizing math formulas and symbols, difficulty organizing numbers and difficulty to solve the problems. It is estimated to occur in 6% school age children. Mathematic disorder is commonly found co morbid with reading disorder and disorder of written expression.

Attention disorder with or without hyperactivity, are considered learning disabilities in themselves. They often co-exist with learning disabilities but are different disorder. Attention disorder affects mostly boys and is accompanied by hyperactivity. Because attention problem can seriously interfere with school performance, they often accompany academic skill disorders. Attention deficit disorder affect ability to concentrate stays focused, attend to task, and stay seated. Approximately one third of people with learning disabilities also have attention deficit hyperactivity disorder.

Attention deficit disorder diagnosed through observation and by checking for long term presence of specific behaviour such as constant fidgeting, losing things, interrupting and talking excessively. Attention deficit hyperactivity disorder is treated with drug therapy and behaviour therapy.

The identification of child with specific learning disabilities can cause psychological stress to the parents. Learning disabled children also have physical and psychological stress and face many obstacles in day to-day life. So parents have very important role in teaching how to overcome the obstacles and succeed life effectively. Apart from love and emotional support, teaching will increase the child's hope and confidence.

The school is the important thing for the children to identify and improve their learning capacity and learning problems. School have more influence on lives of the young children than any other social setting expert family. Teachers are the important part of children to modify their learning ability. If the teachers are well knowledgeable about some of the common signs of learning disabilities and learning disorders in children that will help the teachers to identify the problems early and can assist the child to lead a successful life. Paying attention to the normal developmental milestone for toddlers and preschoolers is very important. Early identification of the developmental problem detection of developmental difference may be an early signal of a learning disability and problem that spotted early can be easier to correct.

Multidisciplinary evaluations conducted in school are usually helpful. Careful and conscientious developmental history taking and observation of child in a variety setting (family, school, play ground etc.) are essential in evaluating a child for potential learning disabilities. Every evaluation of these children is essential to be most beneficial, such accommodation begin early in the child's school career, before feeling of frustration and failure have taken their role.

According to National Centre for Learning disabilities, teachers are the essential connection between learning disabled children and management of problem. Within the environment of classroom, a teacher observes the students who are unable to work with other students or fail to change in behaviour or take away from the beauty of the environment. The teachers must be able to identify the pupils with learning problem. The teacher must be able to appraise the situation and decide on a course of action. One course of action may result in identifying a child with a possible learning disability. Understanding the process and protocol of identifying a learning disabled child may help the teacher in understanding this important role.

NEED FOR THE STUDY

Learning disability or learning disorder is a very real problem in the country and sensitivity to it has been rising all over India. Learning disability is a very problem and a stumbling block in schooling and achievement for

many kids and it has been nonexistent and mishandled for many years because people were unaware.

Studies consistently note an increased prevalence of this disorder in males. The ratio ranges from 3:1 to 5:1 and higher. Recent studies suggest that the increased prevalence in males over females may, in part, be explained by referral basis. Males are more likely to be referred for study where as females are frustrated, may become anxious or depressed more than disruptive and may not be recognized as quickly as having difficulty.

It is problem that affects over 13-14 percent of Indian population and affect at least 5 percent of school children and is not an affliction but lifelong condition that has been copied with support and training such children have emerged winners and achievers in their field.

The causes remain a little obscure due to difficulties in assessing, identifying and defining the condition under the existing socio-cultural conditions. In addition to this, the exact causative factors behind learning disorders are also yet to be identified. The more serious concern with learning disability is that it is not a condition with a cure and cannot be fixed.

In 1975, Public law 94 – 142 (the Education For All Handicapped Children Act) mandated all states to provide free and appropriate educational service to all children. Since that time, the number of children identified with learning disorders has increased, and a variety of definitions of learning disabilities has arisen.

The children exhibit specific learning disabilities look normal intellectuals with normal physical abilities. These children show developmental delay in speech and language facilities, problem in visual or auditory perception, problem in visual motor co-ordination and ultimately academic difficulties. The children learning disabilities can vary from being very subtle to severe, with concomitant effect on academic performance. The specific learning disabilities can cast a shadow of failure over the child during school years. They may even interfere with innumerable daily activities that require speaking, writing or dealing with numbers. As a result, peers may often respond negatively to a child's learning disabilities and parents and teachers may attribute such impairments to the child's laziness or lack of motivation. If not diagnosed and intervened during early years of childhood, these problems may adversely affect social relationship in adulthood and occupational success. Further, these learning disabilities have increasing impact on individual life because of enhanced demand for certain kinds of learning in our day-to-day life.

Individual with learning disorders might have an emotional or behavioural problem. Many develop social problems. They might also have a related neurological disorder. For many, the psychological problems are secondary to the frustration and failures experienced because the disabilities were not identified or were inadequately treated. Children with learning disabilities may have difficulty learning social skills and being socially

competent (reviewed by Hazel and Schumacher, 1988). The first neurologically based disorder recognized as frequently associated with a learning disability was attention deficit hyperactivity disorder. (Halperin et al., 1984)

Neuropsychological difference can impact the accurate preparation of social cues with peers. A diagnosis of learning disabilities can cause psychological stress to an individual and their family. Both individual and their family have to be preparing emotionally to cope with the disorder. Accumulation of psychological stress will make the coping process very difficult.

Stress level of the individual may increase by Stigma that friends/family/peers have about learning disorder. Learning disabilities are often present throughout the lifespan, so for successful management of disorder, learning appropriate and effective method of coping is essential. The more serious concern with learning disability is that it is a not condition with a cure.

Intervention for learning disabilities when begun at a young age can help a child function as well as any normal child. Teachers and parents are part of these measures. Teachers need to be knowledgeable about children's development and development of learning ability. When children with special educational needs are integrated into regular classes, teachers need basic skills for learning children with learning disabilities as well as special

knowledge about the resources available in the country. The important measures that are to be implemented are in terms of social support through the right environment along with adequate resources and assistance for helping kids overcome their difficulties. Additional challenges come for these kids when it comes to peer relations and social interactions. Creating an understanding atmosphere among peers is also largely a responsibility of the teacher.

Learning is a change in behaviour. Teachers understand the operation of learning process. A teacher stimulates a pupil's sense to accomplish learning. The classroom is the environment that the teacher creates to facilitate the learning. The interaction of pupil's and teacher creates the harmony of the classroom. The classroom is an interactive world that stimulates senses and creates changes in behaviour.

In the past two decades the percentage of children classified as having learning disability has increased substantially from less than 30% of all children receiving special education and related service in 1977 to a little more than 50% today.

Parents and teachers must remain sensitive to the need and feeling of learning disabled children. Teachers spend most of their day time in the classroom. In the light of the above ideas and experience of the investigator was observed that it is essential to intensify and improve the awareness regarding learning disabilities. Therefore the investigator planned

to conduct the study to administer self instructional module on learning disabilities of school children among school teachers.

STATEMENT OF THE PROBLEM

"A STUDY TO EVALUATE THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE REGARDING LEARNING DISABILITIES OF SCHOOL CHILDREN (6-12 YEARS) AMONG TEACHERS IN A SELECTED SCHOOL AT ELAYAMPALAYAM, NAMAKKAL DISTRICT, TAMIL NADU."

OBJECTIVES OF THE STUDY

- To assess the knowledge of school teachers regarding learning disabilities in school children.
- To administer self instruction module regarding learning disabilities.
- To assess the post test score after self instructional module.
- To compare the pre-test and post-test score
- To find out the relationship between pre-test knowledge score with selected socio-demographic variables such as age, sex, religion, marital status, education, year of experience, previous knowledge, previous exposure, exposure to in-service education and duration of in-service education.

OPERATIONAL DEFINITIONS

Knowledge

Knowledge means facts, descriptions, information or skill acquired by teachers on learning disabilities.

Effectiveness

Effectiveness is an output of specific review/analysis that measures the achievement of a specific educational goal.

Teacher

Teachers include those teachers with professional qualification and who handle children in the age group of 6 – 12 years is a selected school.

Learning disabilities

It is heterogeneous group of disorder manifested by significant difficulties in the acquisition and use of listening, speaking, writing, reading, reasoning, and mathematical abilities.

Self instructional module

Self instructional module refers to self sufficient unit of instruction and information regarding learning disabilities and its various aspects designed to be administered to the participant.

ASSUMPTIONS

- Teachers may have some knowledge regarding learning disabilities in school children.

- ❖ Knowledge of teachers regarding learning disabilities may be influenced by different variables like age, sex, religion, marital status, education, year of experience, previous knowledge, previous exposure, in-service education and duration of in-service education.

LIMITATIONS

- ➢ The study is limited to 40 school teachers so finding could not be generalized.
- ➢ The study is limited to teachers teaching 6-12 years of children.
- ➢ The study is limited to teachers who are present at the time of study.

HYPOTHESIS

- ❖ There will be significant difference between pre-test and post test score on knowledge regarding learning disabilities.
- ❖ There will be a significant relationship between pre test score with selected demographical variables such as age, sex, religion, marital status, education, years of experience, previous knowledge, previous exposure and exposure to in-service education and duration of in-service education.

CONCEPTUAL FRAMEWORK

A conceptual framework is the processor of theory. It provides the broad prospective for nursing practice, research and education. Conceptual framework plays several interrelated roles in the progress of science. Their overall purpose is to make scientific findings meaningful and generalizable.

Polit and Hungler (1995) state that a conceptual framework is interrelated concept on abstraction that is assembled together in some rational scheme by virtue of their relevance to a common theme. It is device that helps to stimulate research and extension of knowledge by providing both direction and impetus.

The conceptual framework of the study is based on the context, input, process and product (CIPP) model by Stuffle Beam. This model consists of four steps of programme evaluation and obtaining information taking decisions. It provides comprehensive, systematic and continuous ongoing framework for programme evaluation.

Stuffle Beam evaluation model consists of the following steps:

- Context evaluation
- Input evaluation
- Process evaluation
- Product evaluation

Context evaluation

It highlights the environment in which the proposed programme exists; describe the plan for decision and collection of data apart from providing rational for the determination of objectives.

The present study is carried out to evaluate the effectiveness of self instructional module in terms of gain in knowledge regarding learning disabilities. Based on literature review it was found that only a few studies

were done on teacher's knowledge regarding learning disabilities. The teachers play a vital role in identifying learning disabilities at the earliest, which will help because early identification and management prevent the disorders from interfering with the normal course of emotional and psychological development.

Input evaluation

Input evaluation consists of development of tool and structuring the design and it work as a foundation for the programme which is planned after context evaluation.

Here, in the present study input refers to the development of a self instructional module regarding learning disabilities. A structured knowledge questionnaire is used to assess the knowledge regarding learning disabilities. The tool is administered for validity, for setting the expert opinion and reliability with test and retest of the prepared tool and reviewing the relevant literature.

Process evaluation

It depicts implementing decisions, involving identifying decisions, limitations and records the activities and events. In the present study it refers to:

- Pilot study and activities
- Assessing knowledge of participant before administration of self instructional module.

Product evaluation

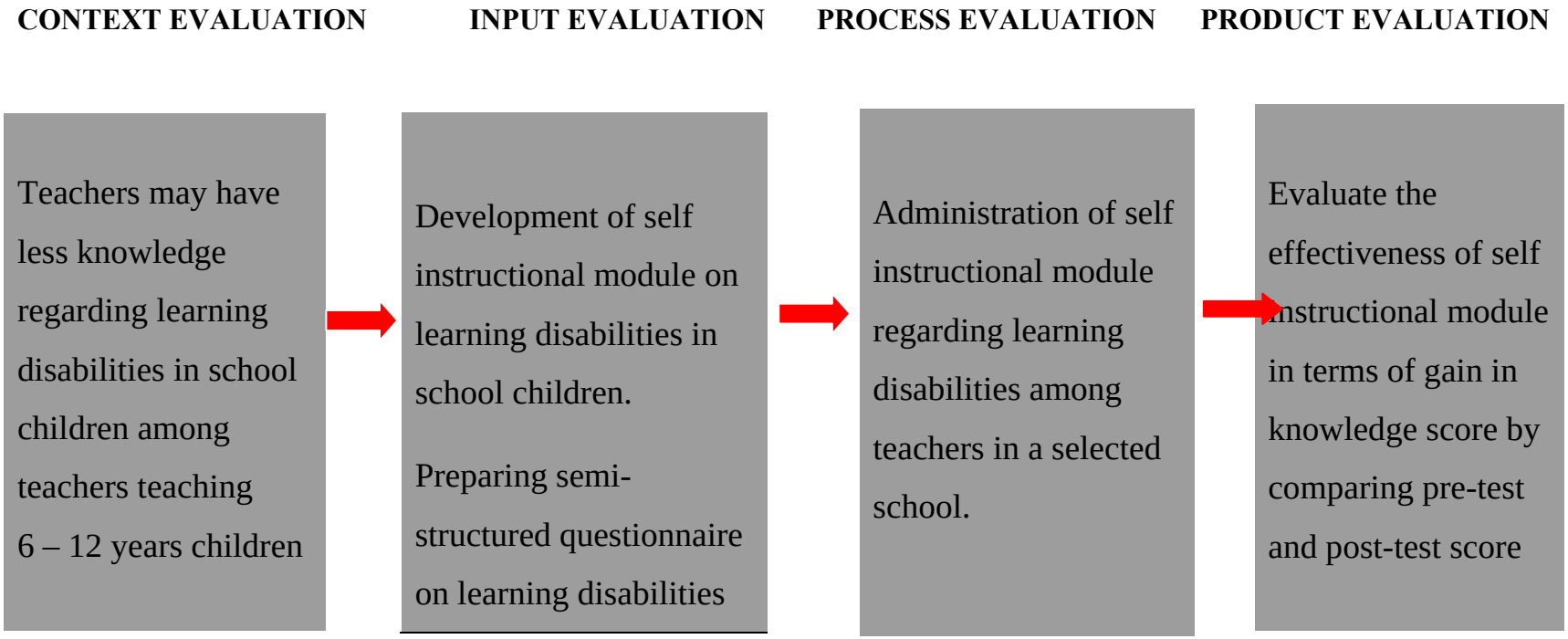
The input and the process enable to achieve the objective of the investigation which is being identified with the product evaluation. It refers to the valid and reliable development of the self instructional module which is implemented as planned.

The valid self instruction module regarding knowledge related to learning disabilities will show the gain in knowledge by the participant in most of the area which is identified with the statistical computation.

CONCLUSION

This chapter dealt with the introduction, need for the study, statement of the problem, operational definitions, assumptions, limitations, hypothesis and conceptual framework.

CONCEPTUAL MODEL BASED ON EVALUATION MODEL BY STUFFLE BEAM,



CHAPTER II

REVIEW OF LITERATURE

Review of literature is an essential component of research process. Review of literature helps a plan and conducts a study in a systematic and scientific means. **(Polit and Hungler, 2004)**

Review of literature is the broad systematic and critical collection and evaluation of the important scholarly published literature as well as unpublished materials.

The investigators has reviewed and organized the relation to learning disability under two headings:

- Literature related to learning disabilities
- Studies related to learning disabilities

LITERATURE RELATED TO LEARNING DISABILITIES IN SCHOOL CHILDREN

Learning disability is heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical skills. (Marilyn J Hockenberry 2009)

Specific learning disability is a disorder in one or more of the basic physiological processes involved in understanding and in using language spoken or written which may manifest itself as an imperfect ability to listen, think, speak, read, write, and spell or to do mathematical calculation. (Dr. G. Lokanadha Reddi (2005)

Learning disability, scholastic backwardness, school failure are common terms applied to children who experience difficulty in copying with academic skills. Learning disability is the most common developmental disabilities in children. It is estimated that 5-15 percent of school going children suffers from scholastic backwardness**.** (MS Mahadevaih 2007)

Learning disorders are common neurological disorders that form a subset of developmental disorders. They include reading, writing and mathematical disorders. The estimated prevalence among the population is 5% - 10%, with a greater incidence among boys. (Vicky R. Bowden 1998)

Reading disorder is defined as reading achievement below what is normal considering the student’s age, intelligence, and education. The poor reading skills cause problems with the student's academic success and/or other important areas in life. (Behrman 2000)

Reading disorder is common problem affects about 50% school aged children. Dyslexia affects more often in boys than girls. (Shaywitz 1990)

Etiology of reading disorder is multifactorial involving genetic, social, perceptual and language deficit. Other causes are complications during pregnancy, prenatal and perinatal difficulties, and extremely low birth weight, prematurity and intrauterine death. (Rolanlind Smyth 1998)

Children with reading disability make many errors in their oral reading. The errors are characterized by omission, addition and distortion of words. Such children have difficulty in distinguishing between printed letter characters and size and those that only differ in spatial orientation and length of line. The child's reading speed is slow, often with minimal comprehension. (Johnson 1988)

Treatment involved detailed psychometric assessment of the problem by a psychologist followed by an individualized remedial programme carry out by a specialized teacher in collaboration with the psychologist. Most remedial strategies for children with reading disorders are characterized by direct instruction of the various components of reading that focus a child's attention to the connection between speech sound and spelling. Instruction involves

extended practice and is supplemented by speech segmentation training and study skills instruction. (Peter Helm 2002)

Written expression is the most complex skill acquired to convey an understanding of language and to express thought and ideas. Disorder of written expression is characterized by writing skills that are significantly below the expected level of child's age and intellectual capacity. These difficulties impair the child's academic performance and writing in everyday life. (Kliegman 2000)

The prevalence of disorder of written expression alone has not been studied, but, as with reading disorder, it is estimated to occur in approximately 4% of school-age children. The gender ratio in writing disorder is about three times as many as boys. (Shepherd 1993)

Writing disorders are caused by lower level mental activity, heredity, limited attention span, reading disorder and visual impairment. Children with disorder of written expression have difficulties early in grade school in spelling words and expressing their thoughts according to age appropriate grammatical norms. Their spoken and written sentences contain an unusually large number of grammatical errors and poor paragraph organization. (Johnson 1988)

Treatment for a writing disorder might involve a skill approach or a holistic approach. Skills programmes are often used with younger children and focus on letter-sound associations, focusing on reading and spelling. Children might be asked to listen carefully for the sound in words and then to represent these sounds with written letters, saying each letter aloud as it is written. The holistic approach to writing begins with the student's ideas. It involves a series of highly structured steps for narrowing ideas to one topic, writing a first draft, reading at aloud to an audience of peers, and then refining organization and language. (Urhy 1993)

Children with mathematics disorder have difficulty learning and remembering numerals, cannot remember basic facts about numbers, and are slow and inaccurate in computation. Poor achievement in four groups of skills has been identified in mathematics disorder: linguistic skills, perceptual skills, mathematical skills and attention skills. (Marry Ann Bond 2002)

Mathematics disorder alone is estimated to occur in about 1% of school-age children that is approximately 1 of every 5 children with learning disorder. Epidemiological studies have indicated that up to 6% school aged children have some difficulty with mathematics. Mathematics disorder may occur with greater frequency in girls. (Garnett 1998)

Common clinical features of mathematic disorder includes difficulty with various components of mathematics such as learning number names, remembering the signs for addition and subtraction, learning multiplication table, translating words problems into computation, and doing calculations at the expected pace. Mathematics disorder often coexist with other disorders affecting reading, expressive writing, coordination and expressive and receptive language. (Fleischner 1993)

The treatment of mathematic disorder are identification of problems as early as possible, continuous practice in solving math problems use flash card and work book for treatment, use of hand on instruction than theoretical instruction, remedial education with specialist teacher. The most effective treatments of mathematics disorder combine teaching mathematics concept with continuous practice in solving math problems. (Garnett 1993)

Learning disabilities or learning disorders as psychologist prefer, are diagnosed when an individual's achievement on individually administered standardized test in reading, writing or mathematics are below the expected performance based on age, education and intelligence level. (Gottesman $ Kelly 2000)

In Addition to observing and assessing the child the nurse is responsible for referring the family to appropriate community resources, so that a diagnosis

can be made and treatment planned. Frequent family therapy is recommended to help the family cope with the stress and guilt of having a learning disabled child. (Dorothy R Marlow 2006)

If the child has a learning disability, specific training activity has been accomplished in self- contained classes. The purpose of programme for children with special learning disability is to assist them toward more successful achievement, personal adjustment and eventual retention in the regular classes. (Marilyn J Hockenberry 2009)

Health service for children with neurodevelopmental disabilities are often coordinated by child development centre or team who provide specialist service for assessment and management of children with physical and learning disabilities, hearing, vision, speech, language and social communication problems**.** **(**Peter helms 2001)

Need of these children best met when the pediatrician contributes as part of a multi disciplinary team which might include the psychologist, teacher and therapist. (A.G.M Campbell 1993)

Attention deficit hyperactivity disorder or attention deficit disorder is a syndrome characterized by degrees of inattention, impulsive behavior and hyperactivity. About 3%- 5% of all American school age children have

attention deficit hyperactivity disorder; boys are more commonly affected than are girls. The disorder affect all part of the child's life. Nancy T. (Hatfield 2008)

A deficit of the catecholamine dopamine and nor epinephrine in the over activity attributed to attention deficit hyperactivity disorder. This deficit of neurotransmitters is believed to lower the threshold for stimuli input. The controversy surrounding this theory relates to cause as effect. (Shaywitz 1983)

Great confusion exists in the scientific literature about learning disabilities and attention deficit hyperactivity disorder because two conditions were not well differentiated by cause, symptoms, or intervention until the mild 1980s. Both of these conditions are intrinsic to an individual and presumed to be the result of central nervous system dysfunction. (Patricia Ludder Jackson 2000)

STUDIES RELATED TO LEARNING DISABILITIES IN SCHOOL CHILDREN

Billet CR and et al (2011) conducted in comparative study about the relationship between brainstem temporal processing and performance on tests of central auditory function in children with reading disorders. The objective of the study was to investigate performance of children with dyslexia with and without abnormal brainstem timing and children with no history of learning or

related disorder on behavioural tests of central and auditory function. The respondents were 30 school age children: group 1:-dyslexia, abnormal brainstem timing; group 2: dyslexia, normal brainstem timing; group 3: typical control from USA. The result shows that all participants group 2 met criteria for auditory processing disorders, where as only a participant in group 1 is met criteria. The biological markers of Auditory Processing identified 6 children in group 1 who did not met criteria for auditory processing disorders but displayed abnormal brainstem timing. They have concluded that the BIOMARK may be useful in identifying children with central auditory dysfunction who would not have been identified using behavioural method of auditory processing disorders assessment. Results underscore the importance of central assessment for children with dyslexia.

Gogate P and et al (2011) conducted a study about ocular disorders in children with learning disabilities. The objective of the study was to study and treat ocular disorder in children with learning disabilities and explore association with their perinatal history. The samples were children with learning disabilities attending 11 special schools in Pune. The result shows total of 664 students were examined 526 of who were more than 16 years of age: 322 were male. A total of 326 had moderate to severe learning disability. 238 had ocular disorder, 143 had an uncorrected refractive error. A total of 132

children with history of perinatal insult had ocular problems. They have conducted that nearly half the children with learning disorder in this study had ocular disorder and one fourth had their vision improved.

Adams HR and et al (2010) conducted an experimental study about learning and attention problems among children with pediatric hypertension. The objective of the study was to determine whether children with sustained primary hypertension are at increased risk for learning disabilities, as a school related manifes**t**ations of neurocognitive problems. The samples were 201 children 10 -18 years of age who are having or not having hypertension in USA. This group consists of 101 children without hypertension and 100 children with hypertension. The result shows 18% children had learning disabilities. In comparison with children without hypertension, children with hypertension were more likely to have learning disabilities. They have conducted that the rate of learning disabilities was significantly higher for children with primary hypertension, compared with children without hypertension.

Hart SA and et al (2010) conducted a quantitative genetic analysis about relationship between symptoms of attention deficit hyperactivity disorder and reading disorder. The objective of the study was to determine the causes of attention deficit hyperactivity disorder and reading and mathematics outcomes,

by examining their common and unique genetic and environmental factors. The samples of the study were 271 pairs of 10-year-old monozygotic and dizygotic twins from the Western Reserve Reading and Mathematics Project. The result of the study showed that both general genetic and general shared-environment factors were influenced the attention deficit hyperactivity disorder symptoms, reading outcomes, and math outcomes. They have concluded that different etiological factors like heredity and environment affected the performance of children with attention deficit hyperactivity disorder and reading and mathematics disability.

Kumbhare and et al (2009) conducted a prospective rating scale and interview based study about anxiety levels of the mother having children with specific learning disability. The objective of the study was to assess the levels of anxiety of mother having children with specific learning disability at time of diagnosis. The samples, 100 mothers of children (70 boys, 30 girls) were interviewed using with the Hamlton anxiety rating scale and a semi-structured questionnaire in Lokmanya Tilak Municipal Medical College and hospital Mumbai. The result shows that 24% of mothers had no anxiety, 75% had mild anxiety and 1% of mother's anxiety level was moderate. The mean total anxiety score of mothers were 5.65 mean psychic anxiety score was 3.92 and mean somatic score was 1.76. The mothers were more tensed common about

their child's poor school performance, child's future, child's behavior and visits to our clinic. They have concluded that most of the mothers had mild anxiety about specific learning disorders of the children at the time of the diagnosis of hidden disability. The counseling may help the mothers to reduce anxiety and may ensure optimum rehabilitation of these children.

Karande and et al (2009) conducted a cross sectional questionnaire based study about quality of life of parents who is having children with specific learning disability which is newly diagnosed. The objective of the study was to evaluate the effect of clinical and socio demographic characteristic on their quality of life and to analyze the quality of life of parents having children suffering from specific learning disabilities. The samples were 150 parents of children consecutively diagnosed as having specific learning disability were enrolled in the learning disability clinic in tertiary care hospital, Mumbai. The result shows the female gender being currently ill, being in paid work, and having a male child were characteristics that independently predicted a poor domain. They have concluded that counseling was very essential treatment modality for improving the quality of life of parents with learning disabled children. These measures reduce risk factors of learning disabilities and assisted in the management of learning disabilities.

Palomo-Alvarez C and et al (2009) conducted a cross-sectional study about Relationship between oculomotor scanning determined by the Developmental Eye Movement test and reading test among school children with difficulties in reading. The objectives of the study was to determine the effect of Developmental Eye Movement (DEM) test times and reading speeds of children with poor reading skills but without dyslexia in a Spanish non-clinical population. The samples of the study were eighty one 8-11 years of age children with poor reading ability, studying in the third to fifth grades, selected from 11 elementary schools in Spain. The result shows that Mean Horizontal Developmental Eye Movement times were higher than normative values for children in the third, fourth and fifth grades, by 20 seconds, 12 seconds, and 3 seconds respectively. Mean reading speeds were 18 words per minute lower than the norm for the third and fourth grades respectively, and 30 words per minute lower than the norm for the fifth grade. They have conclude that Poor readers showed poor horizontal scanning as assessed by Developmental Eye Movement test that was related to a slow reading speed. This test should be used by optometric clinicians as a screening tool to help identify poor reading skills in school children at an early stage.

Mahajan V and et al (2009) conducted a qualitative study about recollection of learned disabled adolescence of their school experience. The

objective of the study is to analyze the recollection of adolescents with specific learning disability who were going for education in regular schools. The respondents were 30 adolescents in Lokmanya Tilak Municipal Hospital, Mumbai. The result shows 12, 9 (30%), 9 (30%) adolescents had overall neutral recollections, 'overall' positive recollections and ‘overall’ negative recollections about specific learning disabilities during their schooling. They have concluded that the unpleasant experience of students with learning disabilities can be reduced by improving knowledge teachers, class mates, peer groups and family members regarding learning disabilities.

Manjula patil and et al (2008) conducted a comparative study about intervention on academic performance of school children and reading and writing difficulties. The objective of the study was to know the impact of intervention on academic performance of schoolchildren with reading and writing difficulties. The samples were children studying in 6^{th} standard (418) were drawn from14 selected schools in Dharward city (Karnataka). 180 children who were found to be having reading difficulty and 114 were having difficulty in writing were selected for further testing on reading and writing abilities along with a group of normal children (165in reading and 240 in writing) for comparison purpose. The result showed that there was significant improvement in the experimental group children. They have concluded that

intervention is very effective in reducing their difficulties in reading and writing.

Vrinda Nair and et al (2008) conducted a prospective study about effectiveness of Clonidine versus Carbamazepine in Children who is suffering from attention deficit hyperactivity disorder. The objective of the study was to compare the effectiveness of Clonidine and Carbamazepine in children who had attention deficit hyperactivity disorder. The samples were fifty children between 4 and 12 years of age with attention deficit hyperactivity disorder, over a period of 2 years, from 2005 to 2007 in a tertiary care hospital, Pondicherry, South India. The result shows that in improving the hyperactivity and impulsivity symptoms in children with attention deficit hyperactivity disorder Clonidine was more effective as compared to Carbamazepine. They have concluded that Clonidine was safer and cheaper alternative treatment for children who is suffering from attention deficit hyperactivity disorder and it was more effective on their hyperactivity and impulsivity symptoms.

Vanaja Chittinahalli Shankaraarayanan and et al (2007) conducted a comparative study about mismatch negativity in children with dyslexia and speaking Indian language. The objective of the study was to assess the auditory process in children with dyslexia and the children who speak and studied Indian language. The samples were 15 children with dyslexia and 15 control

children from All India Institute of speech and leaning, Mysore. Speech and tonal stimuli was elicited by Mismatch negativity. The result shows abnormalities in the speech process and tonal stimuli. Speech elicited mismatch negativity showed greater abnormalities as compared to tonal stimuli. Though higher for spectral contrast, processing deficit was also shown for durational contrast. They have concluded that children with dyslexia have deficit in processing both spectral and durational cues in spite of having different phonological rules and good phoneme, grapheme correspondence in Indian language.

Karende SA and et al (2007) conducted a prospective questionnaire based study about effectiveness of an education programme regarding specific learning disability among parents. The objective of the study was to investigate parental knowledge of specific learning disability and to evaluate the impact of an educational intervention on it. The respondents were 50 parents in Lokmanya Tilak Municipal Medical Hospital and General Hospital, Mumbai. The result shows there were significant improvement in parental knowledge of specific learning disability. They concluded that parental knowledge of their child's specific learning disability is inadequate and this can be significantly improved by a single session educational programme.

Kulkarni M and et al (2007) conducted a prospective observational study about clinical and psycho educational history of children with specific learning disabilities and developing attention deficit hyper activity disorder. The objective of the study was to collect the clinical history and academic history of children with learning disability and attention deficit hyperactivity disorder. The samples were 50 diagnosed children, 34 boys and 16 girls in Lokmanya Tilak Municipal Medical Hospital and General Hospital, Mumbai. Specific learning disability was diagnosed on the basis of psycho educational testing. The result shows that the 15 (30%) children had problem in perinatal history,12 (24%) had delayed walking where as 11 (22%) children had delayed talking. 5 (10%) had history of microcephaly, 27 (54%)children experienced soft neurological signs and 10 (20%) had habit of primary nocturnal enuresis. The two gender groups had same features. Their academic performance reveals that 96% of children had difficulties in writing, 96% had inattentiveness, 74% had difficulties in mathematics, 68% had hyperactivity and 60% had difficulties in reading. They have concluded that early identification of children with specific learning disabilities and attention deficit hyper activity disorder is very important to improve the school performance and behavior of children.

Zubair Kabir (2007) conducted a multivariable logistic regression models study about the Neurobehavioral Disorders in Children caused by secondhand smoke exposure in the United States. The objectives of the study was to find out the relationship of secondhand tobacco smoke exposure in the home with neurobehavioral disorders (attention-deficit/hyperactivity disorder, learning disabilities, and conduct disorders) in the children below 12 years in the United States. The result of the study was 8.5% of the children's had neurobehavioral disorders with learning disabilities, 5.9% had neurobehavioral disorders with attention-deficit/hyperactivity disorder, and 3.6% had neurobehavioral disorders with behavioral and conduct disorders. Children exposed to secondhand smoke exposure at home had increased risk of childhood neurobehavioral disorders than the children who were not exposed to secondhand smoke exposure. The risk groups are boys, older children between the age of 9 to 11 years, and those living in households with the highest poverty levels. The problem can be prevented by reducing the exposure of children to secondhand smoke in their home. They have concluded that childhood neurobehavioral disorders among children are caused by secondhand exposure in homes in the United States.

Slevin E and et al (2006) conducted a cross-sectional study about emotional expressions and attribution s of teachers and learning disabilities.

The objectives of the study was to assess the relationship between expressed emotion, attributions towards challenging behavior among teachers working within residential or day care centre for people with learning disabilities. The respondents were 15 teachers, were completed attribution tool and the Five Minute Speech Sample (FMSS) to observe emotional expression ratings concerning staff relationships with two children. One child exhibited challenging behavior, while the other did not. Attribution and Emotional expression ratings for each group were compared. The result shows that high levels of Emotional expression made more critical comments towards the child with Challenging behavior as compared with the child without Challenging behavior. They have concluded that staff working with a child had challenging behavior appeared to be developing the 'fundamental attribution error'

Malhotra. S and et al (2005) conducted a cohort study about specific learning disabilities in children. The objectives of the study was to assess specific disability in the clinic population at the child Adolescent psychiatric clinic at post graduate institute of Medical Education and Research Chandigarh to assess the children's neurophysiologic functions using a battery of tests. The respondents were 35 children in the age range of 7 – 14 years (both boys and girls. In the result of the study, they revealed that the battery of test was effective in identifying deficits in language and writing skills and impairment

in specific area of memory. They have concluded that identification of specific learning disabilities is useful in drawing up a treatment of plan specific for a particular child.

Sunil Karende and et al (2005) conducted a comparative study about cognition in specific learning disability. The purpose of the study was to compare the cognition abilities of children with specific learning disability with those of non- impaired children. The sample were 95 newly diagnosed specific learning disability children aged 9 – 14 years and control group consist of 125 non- impaired children aged 9 -14 years from Lokmanya Tilak Municipal Medical Hospital and General Hospital, Mumbai. The result shows the children with specific learning disability had significantly lower score. They have concluded that cognitive abilities are significantly impaired in children with specific learning disability.

Chaudari S and et al (2004) conducted a prospective cohort study about low birth weight and cognitive abilities and educational performance at 12 years. The objective of the study was to assess intellectual capacity, Vision and motor perception, motor ability and level of school performance of children with less than 2000 grams birth weight, at the age of 12 years. The sample were 180 eighty children weighing less than 2000 grams at birth and 90 control children were assessed in KEM Hospital, Pune. In the 78 very low birth weight

children, there were 12 (15.4%) mentally retarded children when compared to 3 (3.3%) amongst controls. There were only 3 (3.8%) 'bright' children among very low birth weight group, as compared to 20 (22.2%) in the control group. The result shows that Vision and motor perception and motor ability of the study group was poor, and they had difficulty in writing and mathematics, especially the preterm, very low birth weight and small for gestational age. They have concluded that the children with less than 2000 grams birth weight had less intelligence and poor academic performance than that of controls, though within normal limits. They also have poor vision and motor perception, motor ability, reading and mathematics learning disabilities.

Ida Kirkegaard and et al (2003) conducted a cohort study about the influence of Gestational Age and Birth Weight to School Performance of 10-Year-Old Children. The main objective of the study was to assess the level of school performance of premature, low birth weight children and term with normal birth weight children. The respondents of this study were 5319 children, in Denmark born from January 1990 to June 1992, with the age group of 9 and 11 years. The result of the study shows that there is significant relationship between birth weight and reading, spelling and arithmetic disabilities. The children below 2500gm weight are having the highest risks. The children with 3000 to 3499 gm were at increased risk of all 3 learning

disabilities than the children with 3500 to 4000 gm weight. The chance of reading and spelling difficulties were more often in the children born at term than the children born at gestational age 33 to 36 weeks and 37 to 38 weeks. It reveals that there was significant association between gestational age and arithmetic difficulties. They have concluded that there is significant relation between gestational age and birth weight with school performance in the 10-year-old child and the association extended according to the both birth weight and gestational age.

Moster D and et al (2002) conducted a cohort study about Apgar scores and early neonatal symptoms with minor disabilities in children at school age. The purpose of the study was to find out relationship between low five minute Apgar score and symptoms of neonatal encephalopathy which leads to minor impairments at school age. The respondents were 727 children with normal birth weights and there is no congenital malformations and major neurological abnormalities in Norway. The result shows that the risk of developing minor motor impairments and reducing the level of reading performance is highly greater in children with 3 or less than 3 five minute Apgar score with neonatal encephalopathy than the children with normal Apgar scores and no neonatal symptoms. They have concluded that children with learning difficulties and

neurodevelopmental impairments had the history of low Apgar scores and subsequent signs of cerebral depression but do not develop cerebral palsy.

Kouichi Yoshimasu and et al (2000) conducted a population based birth cohort study about incidence of children affected by Written-Language Disorder with and without attention deficit hyperactivity disorder. The objective of the study was to find out the incidence of children affected by written-language disorder with and without attention-deficit/hyperactivity disorder. The samples of the study were 5718 children born in 1976–1982 in Rochester, Minnesota. The result shows for both genders, the cumulative incidence of written language disorder with attention-deficit/hyperactivity disorder is higher than without attention-deficit/hyperactivity disorder. For boys the incidence of written language disorder with attention-deficit/hyperactivity disorder was 64.5% and without attention-deficit/hyperactivity disorder was 16.5%, where as for girls the incidence of written language disorder with attention-deficit/hyperactivity disorder was 57.0% and without attention-deficit/hyperactivity disorder was 9.4%. The relationship between attention-deficit hyperactivity disorder and written-language disorder with reading disorder was significantly higher in girls than boys. They have concluded that for both boys and girls attention-deficit/hyperactivity disorder is strongly associated with written language

disorder with or without reading disorder. Girls with attention-deficit/hyperactivity disorder had higher risk of having written language disorder with reading disorder than the boys with attention-deficit/hyperactivity disorder, whereas the incidence of written language disorder without reading disorder was same for the boys and girls.

Shenoy J and et al (1998) conducted a cross sectional with a two-instrument, two-phase design, about psychological disturbance among the 5 -8 years old school children. The objective of the study was to identify the influence of psychological disturbance among school children in learning problem. the respondents in the first phase (screening), 48 teachers rated 1535 children (810 boys and 725 girls) drawn from five schools in Bangalore city on the 26-item Children's Behaviour Questionnaire (CBQ). This resulted in 281 children being identified as disturbed. In the second phase, 279 of the children identified as disturbed on the CBQ and a matched group of 272 'non-disturbed children' (182 boys and 90 girls) were again rated by teachers, this time using the Child Behaviour Checklist. In the same phase, 166 of the disturbed children and a matched group of 169 non-disturbed children were rated by parents using the Child Behaviour Checklist. They have concluded that learning problems were identified in a substantial number of disturbed boys and girls.

CONCLUSION

This chapter dealt with literature and studies related to learning disabilities. It helped the investigator to gain in depth knowledge regarding the topic. It made the investigator to become more aware of various strategies that can be used to develop conceptual framework, tool and self instructional module.

CHAPTER III

METHODOLOGY

Methodology of research refers to investigation of way of obtaining, organizing and analyzing data. Methodological studies address the development, validation and evaluation of research tool and methods. (Polit and Beck 2004)

Research methodology is the development and evaluation of data collection instrument, scale or technique. The role of methodology consists of procedure and technique for conducting a study. (Feedith Haber 2006)

This chapter deals with the description of methodology and different steps which were adopted for gathering and organizing data for investigation, achievement of aim and objectives of present study.

The methodology of present study involves:

- Research approach
- Research design
- Variables under study
- Study setting
- Target population
- Samples and sampling technique

- Sample selection criteria
- Development and description of tool
- Development of self instructional module
- Content validity
- Pilot study
- Reliability of instrument
- Procedure for data collection
- Plan for data analysis

RESEARCH ARROACH

The research approach tells the researcher from where the data is to be collected and how to analyze them. It also suggest possible conclusion and help the researcher in answering research questions in the most accurate and efficient way. (Celia. E. Willis 2004)

In order to accomplish the objectives quasi-experimental design with one group pre-test post-test method was considered as most appropriate for present study. The approach is very much helpful to evaluate the effectiveness of self instructional module on learning disabilities.

RESEARCH DESIGN

Polit and Hungler state that, a research design is to collect and analyze the data, including specification for enhancing the internal and external validity of the study.

According to Campell and Stantly one group pre-test post-test design (O_1 - X - O_2) is the quasi-experimental design. This design is used to assess the knowledge regarding learning disabilities among teachers and to evaluate the effectiveness of self instructional module. In this design the investigator conducted a knowledge test before and after administration of self instructional module.

The design adopted for present study can be represented as:

O_1 - knowledge test before administration of self instructional module.

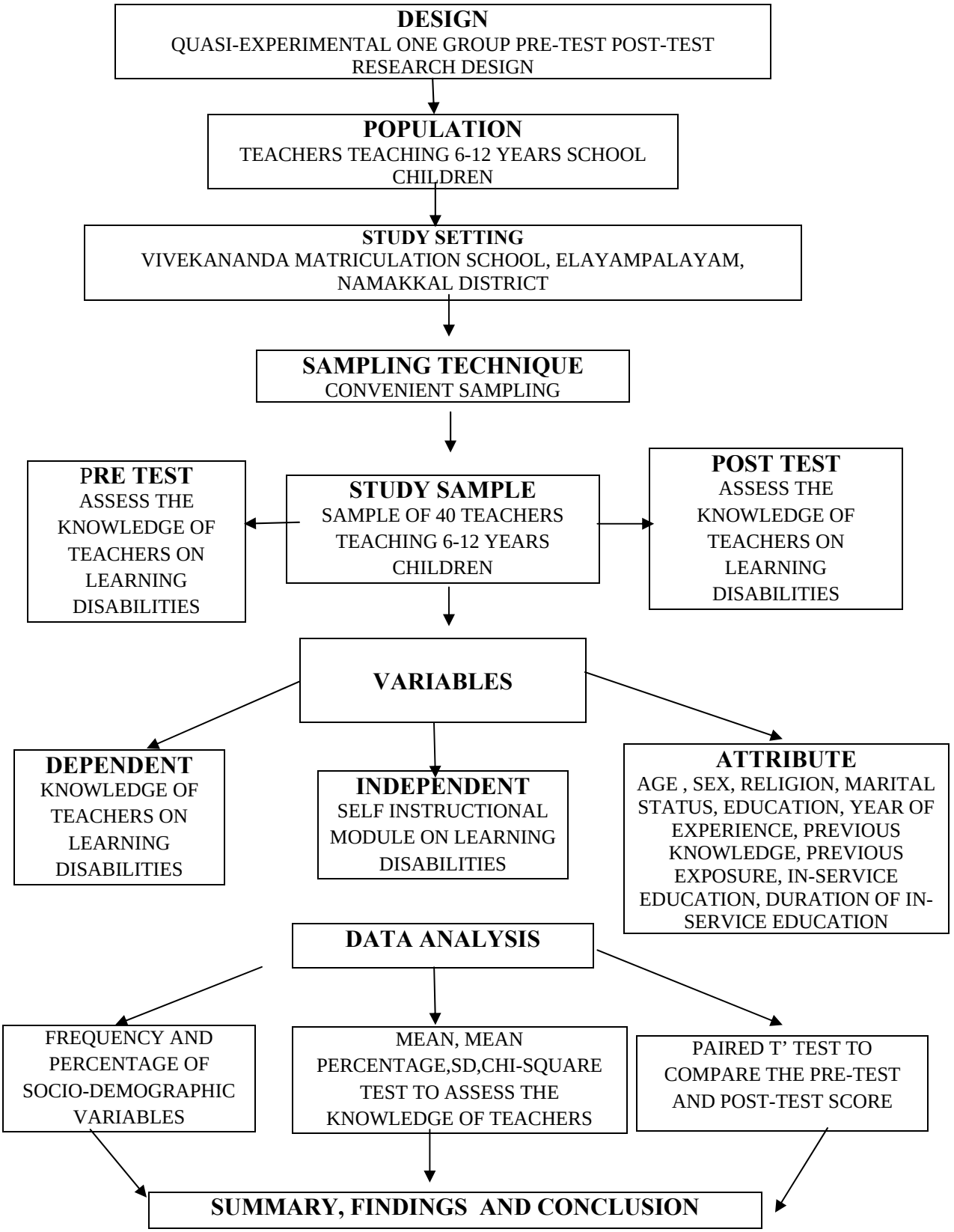
X - Self instructional module on learning disabilities.

Group	Pre-Test	Treatment	Post-Test
Teachers	Knowledge test O_1	Self instructional module X	Knowledge test O_2

O_2 - knowledge test after administration of self instructional modul

In the one group pre-test post-test design, the depended variable is measured before independent variable is applied. After an appropriate period the dependent variable is measured again. In the analysis of data, the difference between the initial and terminal measurement represents the effect of the independent variable.

SCHEMATIC REPRESENTATION OF RESEARCH DESIGN



VARIABLES UNDER STUDY

INDEPENDENT VARIABLE

In the present study the independent variable under study was self instructional module on learning disabilities

DEPENDENT VARIABLE

- Knowledge score on learning disabilities before self instructional module
- Knowledge score on learning disabilities after self instructional module

ATTRIBUTED VARIABLES

Attributed or demographic variables are the characteristics of the subjects that are collected to describe the sample. Age, sex, religion, marital status, education, year of experience, previous knowledge, previous exposure, in-service education and duration of in-service education are attributed variables in the present study.

SETTINGS OF THE STUDY

The study setting is the physical location and condition in which data collection takes place. (Polit and Hungler 2004)

Selection of area of the study is one of the essential steps in the research process. The selection of the school for the present study is on the basis of:

- Availability of subjects
- Feasibility of conducting study
- Economy of time and money

The present study was conducted in Vivekananda Matriculation School at Elayampalayam, Namakkal District. The study was conducted for 40 teachers teaching 6-12 years children.

TARGET POPULATION

According to (Polit and Beck 2004) the population refers to the entire aggregation of cases that meets the entire criteria.

The target population for the present study was teachers teaching 6-12 years children in Vivekananda Matriculation School at Elayampalayam, Namakkal District.

SAMPLES AND SAMPLING TECHNIQUES

Sample is the subset of population selected to participate in a research study. Sampling refers to the process of selecting a portion of population to represent the entire population. (Polit and Hungler 2006)

The sample of the study is composed of 40 teachers teaching 6-12 years of children in Vivekananda Matriculation School at Elayampalayam. Convenience sampling technique was used to select the 40 subjects from the target population.

CRITERIA FOR SELECTION OF SAMPLE

INCLUSION CRITERIA

- The teachers teaching 6-12 years of children.
- The teachers present at the time of study.

SELECTION AND DEVELOPMENT OF INSTRUMENT

SELECTION OF INSTRUMENT

Semi structured questionnaire technique was used as research tool. It is considered to be the most appropriate instrument to elicit the response from the literate subjects.

DEVELOPMENT OF THE INSTRUMENT

In the process of development of tool, the investigator used the following steps:

- ✓ Literature review
- ✓ Expert’s opinion

Literature related to topic available from books, journals, periodicals, published and unpublished research studies, articles, and topic related websites were reviewed to develop the tool.

The investigator discussed the topic with the experts in the field of nursing, teaching and statistics and incorporated their valuable suggestions.

DESCRIPTION OF THE INSTRUMENT

The considered of semi-structured questionnaire which had two sections:

SECTION A

Demographic data consists of 10 items seeking information about background data such as age, sex, religion, marital status, education, year of experience, previous knowledge, previous exposure, in-service education and duration of in-service education.

SECTION B

The content of items are general aspect of learning disabilities, this consist of questions related to definition, causes, signs and symptoms, diagnostic evaluation and treatment regarding learning disabilities.

DEVELOPMENT OF SELF INSTRUCTIONAL MODULE

The self instructional module is a systematically developed instructional material designed for particular group of participants to provide the necessary information.

The self instructional module was prepared to enhance the knowledge of teachers regarding learning disabilities and was given to experts for their comments.

CONTENT VALIDITY

Content validity is the most important simple methodological criteria for evaluating any measuring instruments. Validity reflects how accurately the measures yield information about the true and real variable being studied. (Carol L Macnee 2004)

The content of instrument was validated by eight experts in the field of nursing, teaching and statistics. According to experts opinion necessary changes were incorporated in the tool and tool was finalized.

RELIABILITY OF THE INSTRUMENT

Reliability of the instrument defined as the extent to which the instrument yield the same result on repeated measures. (Polit and Hungler 2004)

The semi-structured questionnaire was administered to 6 teachers teaching 6 – 12 years of children in Little Flower School at Karattupalayam under Namakkal District.

The split half method was used to assess the reliability of the tool. The correlation coefficient(r=0.99) was found and indicated high reliability of tool to conducted a study.

PILOT STUDY

According to Polit and Hungler, 2004 pilot study is a small version or trial run of the major study. The purpose of the pilot study is to get the information for improving the project and for assessing its feasibility.

A pilot study was conducted in the month of September in Little Flower School, Karattupalayam under Namakkal District. The investigator selected 6 teachers for pilot study and administered pre test questionnaire. Self instructional module was given on the same day and after 7 days post test was conducted with same questionnaire to evaluate the effectiveness of self instructional module.

DATA COLLECTION PROCEDURE

The data was collected in the month of October. The investigator obtained the permission from school authority for conducting the study. 40 teachers were selected by convenience sampling technique based on inclusion criteria. The purpose of study was explained to the sample with self introduction. The pre test questionnaire was distributed to teachers and they answered within 30 minutes and self instructional module was given after pre test. The subjects were interested and actively participated in asking questions and clarifying their doubts. Subjects were answered post test questionnaire on 7^{th} day after distribution of self instructional module.

PLAN FOR DATA ANALYSIS

The obtained data was analyzed on the basis of objectives of the study by using descriptive and inferential statistics. The plan for data analysis was as follows:

- Data were organized in master sheet.
- The frequencies and percentage of the analysis of socio-demographic variables like age, sex, religion, marital status, education, year of experience, previous knowledge, previous experience, in-service education and duration of in-service education were presented in table and graph.

- Maximum score, range score, mean score, mean score percentage and standard deviation of pre-test and post-test score were analyzed and presented in the table.
- Paired‘t’ test is used to assess the effectiveness of self instructional module on learning disabilities and presented in table.
- Inferential statistics especially chi-square test is used to find out the association between pre-test knowledge of teachers and socio-demographic variables and findings were showed in tables and graphs.

SUMMARY

This chapter included the description of research approach, research design, study settings, target population, sample and sampling techniques, selection criteria, development and description of tool, development of instructional module, content validity, reliability of the instrument, pilot study, and data collection procedure. And plan for data analysis.

CHAPTER IV

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

This chapter deals with the analysis and interpretation of collected data from a sample of 40 teachers teaching 6 -12 years children in Vivekananda Matriculation School at Elayampalayam under Namakkal District to evaluate the effectiveness of self instructional module on learning disabilities in school children. The purpose of analysis is to reduce the data to a meaningful and interpretable form, so that the research problem can be studied and tested.

Analysis is a method of organizing, sorting, and scrutinizing the data in such a way that research questions can be answered. (Polit and Hungler 2005)

The data analysis contains five major sections. The first section includes the number and percentage of analysis which will be used to describe the demographic variables of teachers. The second and third and fourth sections of data analysis include descriptive analysis which will describe knowledge of teachers regarding learning disabilities in school children before and after self instructional module. The final section of the data analysis involves chi-square analysis which was run to examine the association of pre-test knowledge with selected demographic variables.

The data collected by semi-structured questionnaire was analyzed by descriptive and inferential statistics which are necessary to provide substantive summary of the results in relation to objectives.

OBJECTIVES OF THE STUDY

- To assess the knowledge of school teachers regarding learning disabilities.
- To administer self instruction module regarding learning disabilities.
- To assess the post test score after self instructional module.
- To compare the pre-test and post-test score
- To find out the relationship between pre-test knowledge score with selected socio-demographic variables such as age, sex, religion, marital status, education, year of experience, previous knowledge, previous exposure, exposure to in-service education and duration of in-service education.

PRESENTATION OF DATA

The analysis of the data is organized and presented under the following headings:

SECTION 1: Description of demographic variables

SECTION 2: Assessment of knowledge level of teachers regarding learning disabilities in school children before self instructional module.

SECTION 3: Assessment of knowledge level of teachers regarding learning disabilities in school children after self instructional module.

SECTION 4: Comparison of knowledge level of teachers before and after self instructional module. Assess the effectiveness of self instructional module.

SECTION5: Association between pre-test knowledge and selected demographic variables.

SECTION – 1

DESCRIPTION OF SOCIO-DEMOGRAPHIC VARIABLES OF TEACHERS TEACHING 6-12 YEARS CHILDREN

Table 4.1.1.Distribution of respondents by age

N=40

SL NO	CATEGORY	RESPONDENTS	
		NUMBER	PERCENTAGE (%)
1	<25 years	6	15
	26 -30 years	12	30
	31-35 years	17	42.5
	>36 years	5	12.5
	Total	**40**	**100**

Figure 4.1.1 Distribution of respondents by age

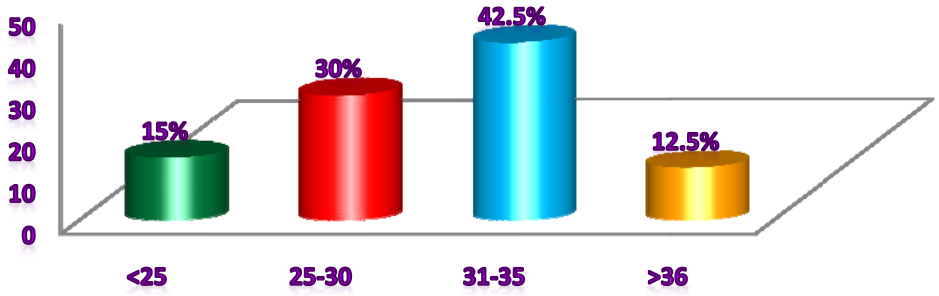


Table 4.1.1 and figure 4.1.1 Shows that distribution of sample according to their age. Among 40 teachers 6 (15%) were in the age of < 25 years, 12 (30%) were in the age group of 26-30 years, 17 (42.5%) were in the age group of 31 – 35 years and 5 (12.5%) were in the age group of above 36 years.

Table 4.1.2.Distribution of respondents by sex

N=40

SL.NO	CATEGORY	RESPONDENTS	
		NUMBER	PERCENTAGE (%)
2	Male	5	12.5
	Female	35	87.5
	Total	**40**	**100**

Figure 4.1.2.Distribution of respondents by sex

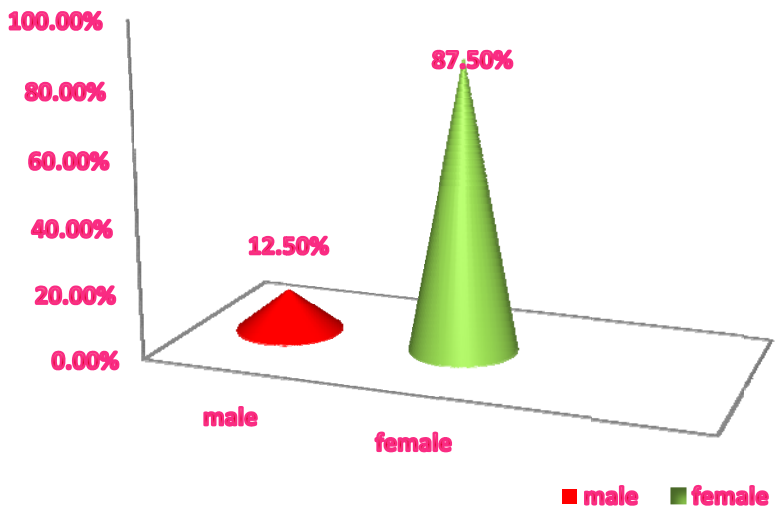


Table 4.1.2 and figure 4.1.2 shows that distribution of subjects by sex.

In this table 5 (12.5%) respondents were males and 35 (87.5%) respondents were females.

Table 4.1.3.Distribution of respondents by religion

N=40

SLNO	CATEGORY	RESPONDENTS	
		NUMBER	PERCENTAGE (%)
3	Hindu	34	85
	Christian	3	7.5
	Muslim	3	7.5
	Total	**40**	**100**

Figure 4.1.3 Distribution of respondents by religion

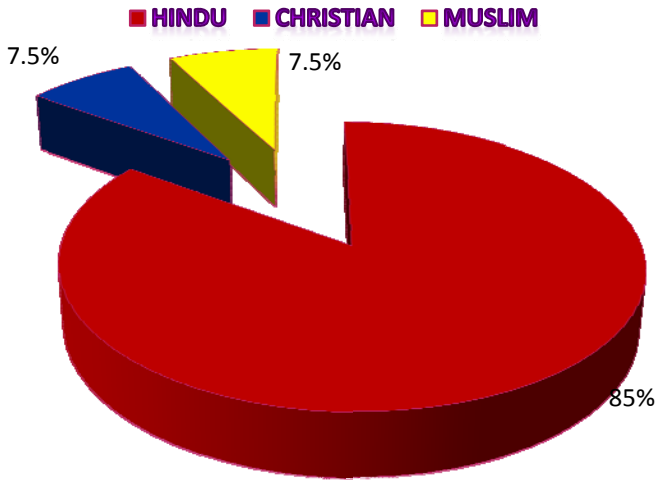


Table 4.1.3 and figure 4.1.3 shows that distribution of respondents by religion. Majority 34 (85%) respondents were Hindus, 3 (7.5%) were Christians and 3(7.5%) were Muslims.

Table 4.1.4. Distribution of respondents by marital status

N=40

SL NO	CATEGORY	RESPONDENTS	
		NUMBER	PERCENTAGE (%)
4	Married	27	67.5
	Unmarried	13	32.5
	Separated	0	0
	Divorcee	0	0
	Total	**40**	**100**

Figure 4.1.4 distribution of respondents by marital status

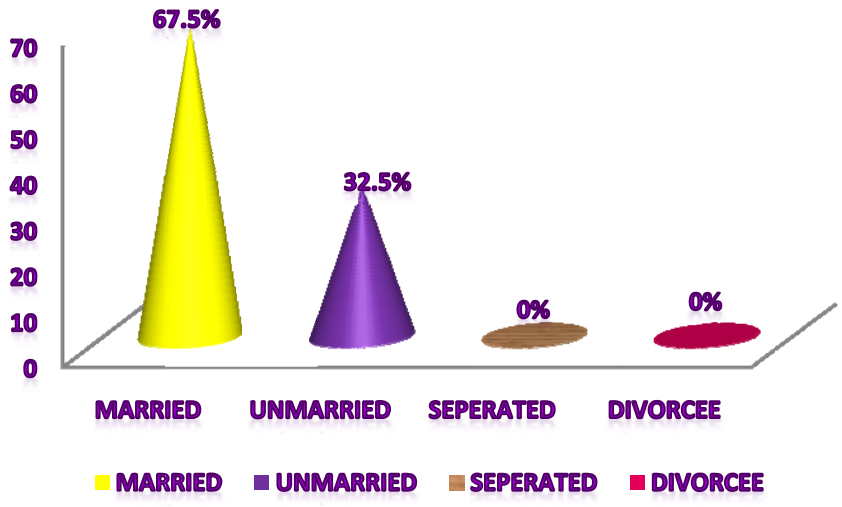


Table 4.1.4 and figure 4.1.4 shows that distribution by marital status. Among 40 teachers 27 (67.5%) were married, 13 (32.5%) were unmarried and no one were separated and divorced.

Table 4.1.5.Distribution of respondents by education

N=40

SL NO	CATEGORY	RESPONDENTS	
		NUMBER	PERCENTAGE (%)
5	+2 with teacher training	1	2.5
	UG with teacher training	10	25
	PG with B.Ed	16	40
	PG with M.Ed	2	5
	others	11	27.5
	Total	**40**	**100**

Figure.4.1.5. distribution of respondents by education

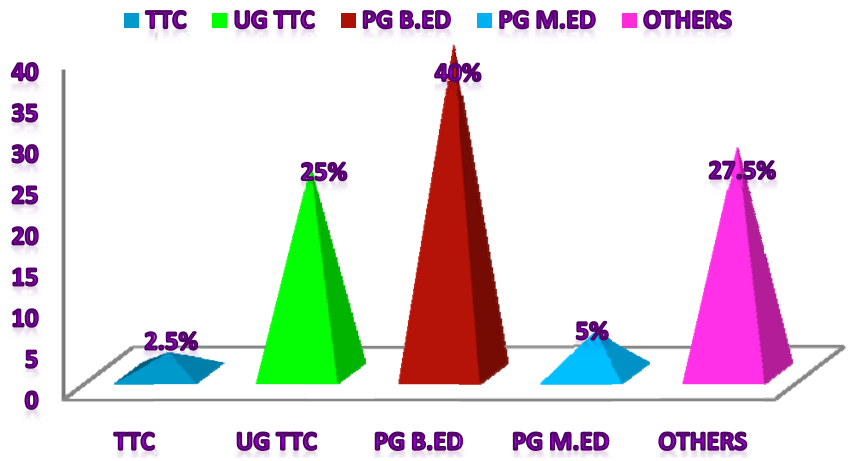


Table 4.1.5 and figure 4.1.5 shows that distribution by education. Out of 40 subjects 1(2.5%), 10 (25%), 16 (40%) 2 (5%) and 11(27.5%) were studied +2 with teacher training, UG with teacher training, PG with B.Ed, PG with M.Ed and other courses.

Table 4.1.6.Distribution of respondents by years of experience

N=40

SL NO	CATEGORY	RESPONDENTS	
		NUMBER	PERCENTAGE (%)
6	< 1 years	9	22.5
	1 -5 years	20	50
	6 – 10 years	6	15
	>10 years	5	12.5
	Total	**40**	**100**

Figure 4.1.6. Distribution of respondents by years of experience

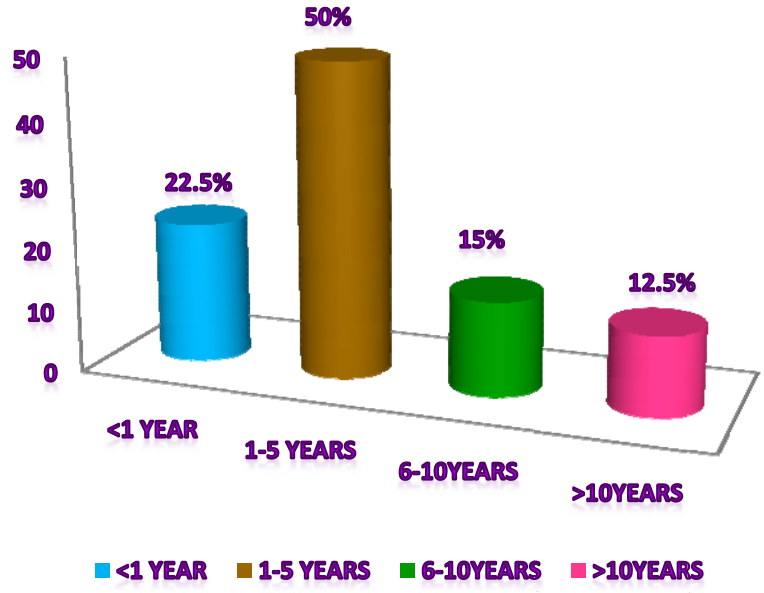


Table 4.1.6 and figure 4.1.6 shows that distribution by years of experience. Among 40 teachers 9(22.5%), 20 (50%) , 6 (15%),5 (12.5%) were having below 1 year, 1-5 years, 6-10 years and above 10 years experience respectively.

Table 4.1.7.Distribution of respondents by previous knowledge

N=40

SL NO	CATEGORY	RESPONDENTS	
		NUMBER	PERCENTAGE (%)
7	Yes	36	90
	No	4	10
	Total	**40**	**100**

Figure 4.1.7. Distribution of respondents by previous knowledge

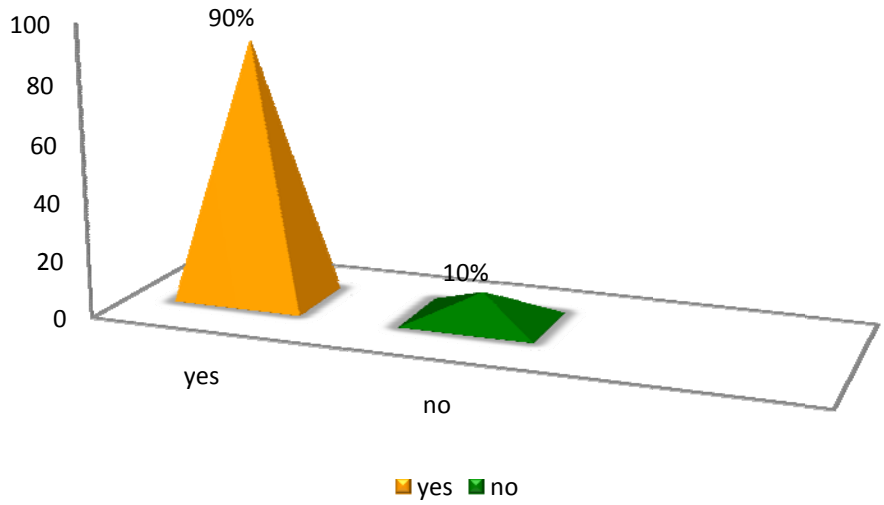


Table 4.1.7 and Figure 4.1.7 shows that distribution by previous knowledge. Majority of subjects 36 (90%) were having previous knowledge and 4 (10%) were not having previous knowledge regarding learning disabilities.

Table 4.1.8.Distribution of respondents by previous exposure

N=40

SL NO	CATEGORY	RESPONDENTS	
		NUMBER	PERCENTAGE (%)
8	Yes	12	30
	No	28	70
	Total	**40**	**100**

Figure 4.1.8. Distribution of respondents by previous exposure

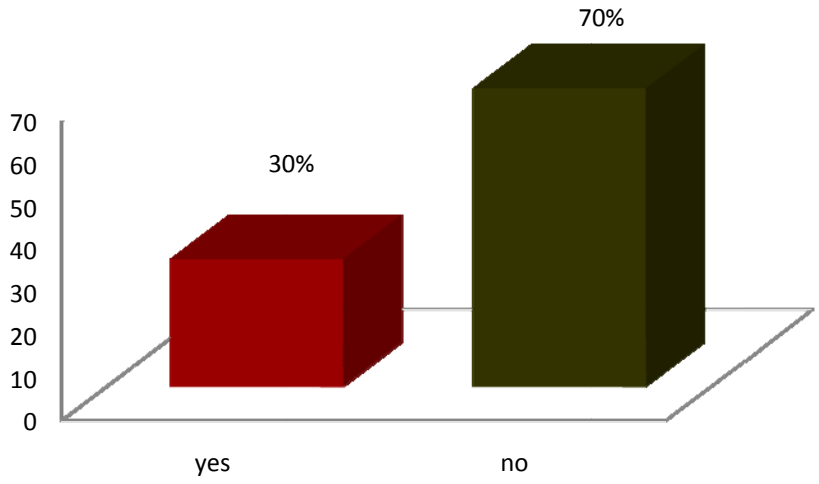


Table 4.1.8 and figure 4.1.8 shows that distribution by previous exposure. Out of 40 teachers, only 12(30%) were exposed to learning disabilities and majority 28 (70%) were not exposed to learning disabilities.

Table 4.1.9.Distribution of respondents by exposure to in-service education

N=40

SL NO	CATEGORY	RESPONDENTS	
		NUMBER	PERCENTAGE (%)
9	Yes	15	37.5
	No	25	62.5
	Total	**40**	**100**

Figure 4.1.9. Distribution of respondents by exposure to in-service education

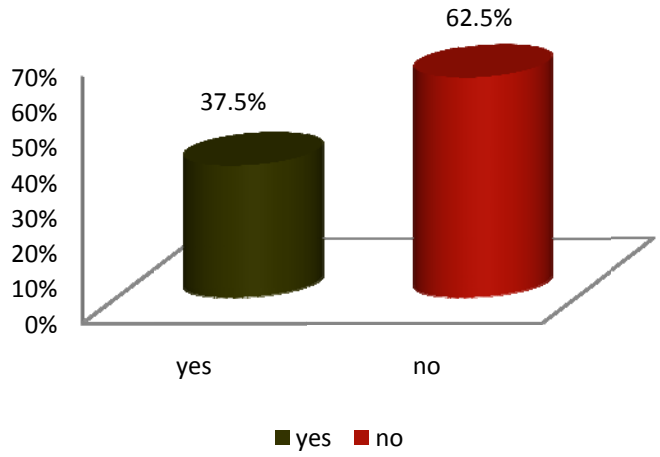


Table 4.1.9 and figure 4.1.9 shows that distribution by exposure to in-service education. Out of 40 teachers 15 (37.5%) were attended in-service education whereas 25(62.5%) were not attended in-service education

Table 4.1.10.Distribution of respondents by duration of in-service education

N=40

SL NO	CATEGORY	RESPONDENTS	
		NUMBER	PERCENTAGE (%)
10	One day	5	37.5
	Two days	7	43.75
	Three days	3	18.75
	One week	0	0
	Total	**15**	**100**

Figure 4.1.10 Distribution by duration of in-service education.

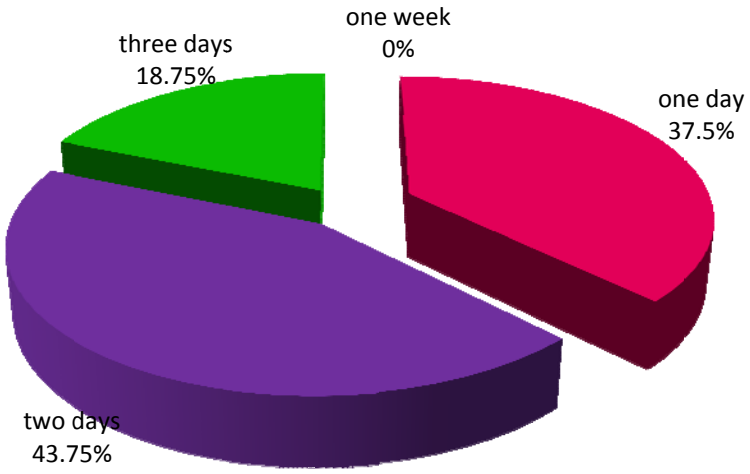


Table 4.1.10 and Figure 4.1.10. shows that out of 40 teachers 5 (37.5%) , 7 (43.75%), 3(18.75%) were attended one day programme, two days programme, three days programme respectively and no one were attended one week programme.

SECTION II

ASSESSMENT OF KNOWLEDGE LEVEL REGARDING LEARNING DISABILITIES OF SCHOOL CHILDREN AMONG TEACHERS TEACHING 6-12 YEARS CHILDREN BEFORE SELF INSTRUCTIONAL MODULE

Table 4.2.1 Pre-test knowledge level regarding learning disabilities of school children among teachers teaching 6-12 years children.

KNOWLEDGE LEVEL	RESPONDENTS	
	NUMBER	PERCENTAGE (%)
Inadequate	38	95
Moderate	2	5
Adequate	O	0
Total	**40**	**100**

Figure 4.2.1 Pre-test knowledge level regarding learning disabilities of school children among teachers teaching 6-12 years children.

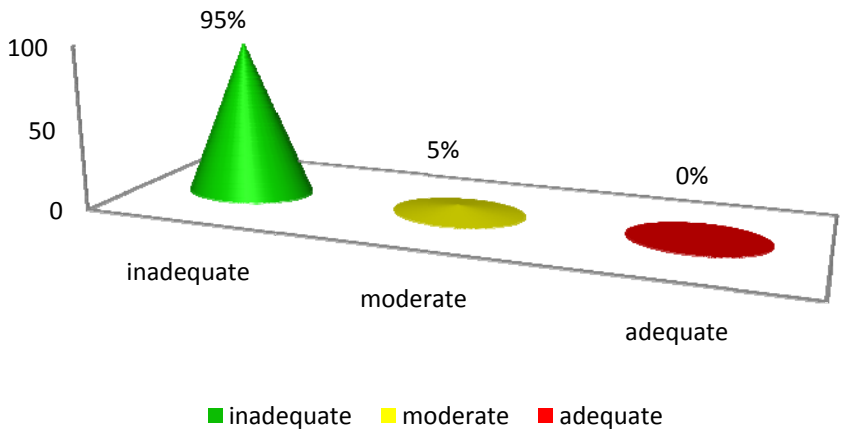


Table 4.2.1 and Figure 4.2.1 Shows that the pre-test knowledge level reveals inadequate, moderate and adequate level. The table depicts that 38 (95%) respondents were belong to inadequate level of knowledge, 2(5%) respondents were belong to moderate level of knowledge and none of them have adequate knowledge level.

Table 4.2.2 Pre-test knowledge score regarding learning disabilities of school children among teachers teaching 6-12 years children before self instructional module

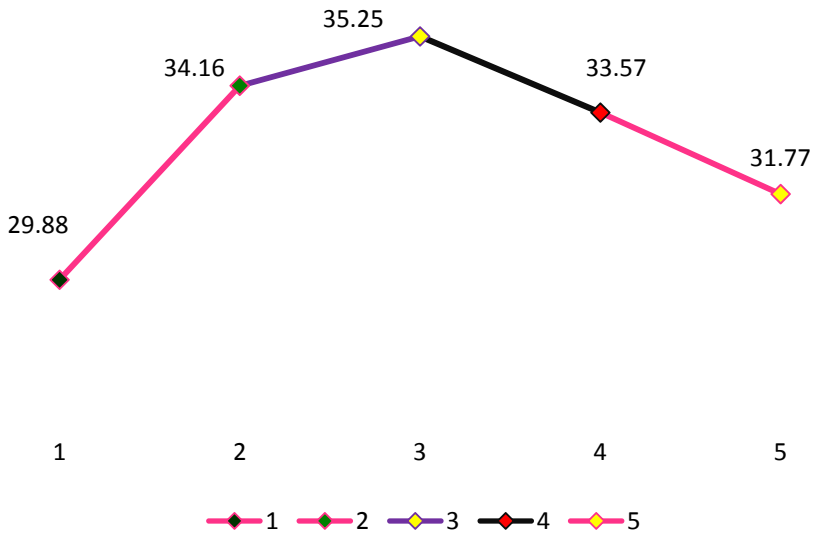
ASPECT	MAX. SCORE	RANGE SCORE	RESPONDENTS KNOWLEDGE		
			MEAN	MEAN %	SD%
Pre-test	121	32 -71	39.6	32.73	9.59

Table 4.2.2 depicts that the overall pre-test score of teachers on learning disabilities was found to be mean score 39.6 with mean score percentage 32.73 and SD 9.59% **.**

Table 4.2.3 Aspect wise pre-test knowledge score on learning disabilities of school children among teachers teaching 6-12 years children.

SL.NO	ASPECT	MAX. SCORE	RANGE SCORE	RESPONDENTS KNOWLEDGE		
				MEAN	MEAN %	SD%
1	General knowledge of learning disabilities	25	4 - 16	7.47	29.88	2.41
2	Reading disorders	24	6 - 13	8.2	34.16	1.72
3	Writing disorder	20	6 - 13	7.05	35.25	1.81
4	Mathematic disorder	21	5 – 16	7.05	33.57	2.59
5	Attention deficit hyperactivity disorder	31	7 – 17	9.85	31.77	2.71
	Combined	**121**	**32 – 71**	**39.6**	**32.73**	**9.59**

Figure 4.2.3 Aspect wise pre-test knowledge score on learning disabilities of school children among teachers teaching 6-12 years children.



The above table 4.2.3 and figure 4.2.3 presents the pre-test mean knowledge score on learning disabilities among teachers before self instructional module.

The mean, mean score percentage, standard deviation were explicated and displayed based on maximum possible score of each area before self instructional module.

The pre-test mean knowledge score on general knowledge regarding learning disabilities was 7.47 with standard deviation 2.41%. Mean knowledge

score was 8.2 with standard deviation 1.72% regarding reading disorder, 7.05 mean knowledge score with standard deviation 1.81% regarding writing disorder, 7.05 mean knowledge score with standard deviation 2.59% regarding mathematic disorder and 9.85 mean knowledge score with standard deviation 2.71% regarding attention deficit hyperactivity disorder .

The pre-test knowledge mean score percentage of 29.88% regarding general knowledge on learning disabilities, 34.16% regarding reading disorders, 35.25% regarding writing disorders, 33.57% regarding mathematic disorders and 31.77% regarding attention deficit hyperactivity disorder were observed before self instructional module.

SECTION III

ASSESSMENT OF KNOWLEDGE LEVEL REGARDING LEARNING DISABILITIES AMONG TEACHERS AFTER SELF INSTRUCTIONAL MODULE

Table 4.3.1 and figure 4.3.1 Post test knowledge level on learning disabilities of school age children among teachers teaching 6-12 years children.

KNOWLEDGE LEVEL	RESPONDENTS	
	NUMBER	PERCENTAGE (%)
Adequate	37	92.5
Moderate	3	7.5
Inadequate	0	0
Total	**40**	**100**

Figure 4.3.1 Post test knowledge level on learning disabilities of school age children among teachers teaching 6-12 years children.

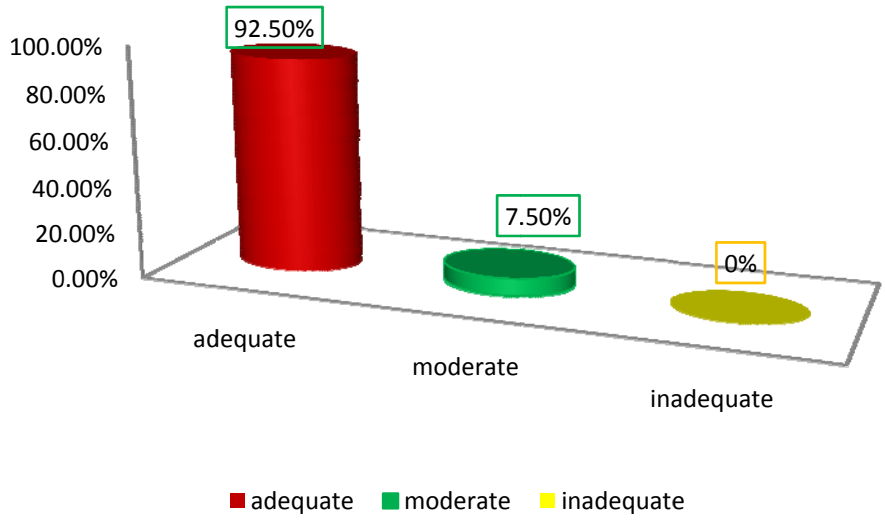


Table 4.3.1 and figure 4.3.1 Shows that the post-test knowledge level reveals adequate, moderate and inadequate level. The table 4.3.1depicts that 37 (92.5%) respondents were belong to adequate level of knowledge, 3(7.5%) respondents were belong to moderate level of knowledge and none of the teachers belong to inadequate knowledge level.

Table 4.3.2 Post-test knowledge score of teachers teaching 6-12years childrenregarding learning disabilities of school children after self instructional module

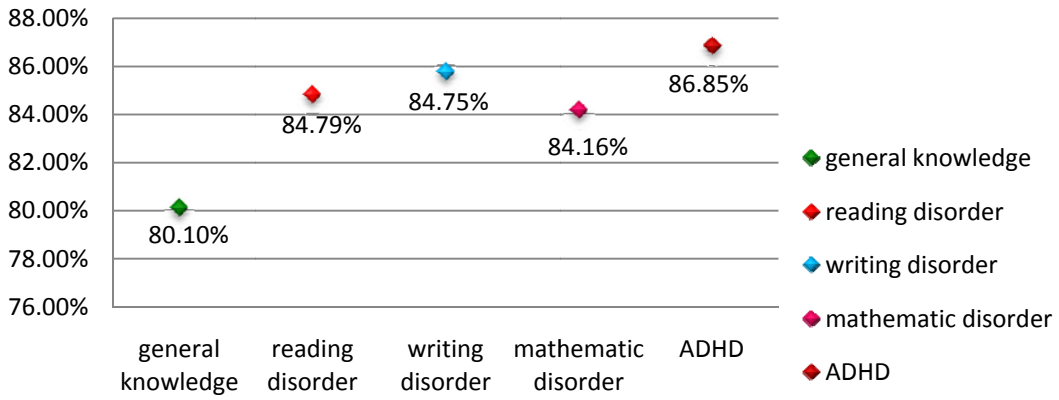
ASPECT	MAX. SCORE	RANGE SCORE	RESPONDENTS KNOWLEDGE		
			MEAN	MEAN %	SD%
Post-test	121	87 -119	102.1	84.42	7.33

The table 4.3.2 depicts that the overall post-test score of teachers on learning disabilities was found to be mean score 102.1 with mean score percentage 84.42 and SD 7.33%.

Table 4.3.3 Aspect wise post-test knowledge score on learning disabilities of school children among teachers teaching 6-12 years children.

SL.NO	ASPECT	MAX. SCORE	RANGE SCORE	RESPONDENTS KNOWLEDGE		
				MEAN	MEAN %	SD%
1	General knowledge of learning disabilities	25	13 – 24	20.02	80.1	3.27
2	Reading disorders	24	17 – 24	20.35	84.79	1.73
3	Writing disorder	20	13 – 20	16.95	84 .75	1.92
4	Mathematic disorder	21	15 – 21	17.67	84.16	1.69
5	Attention deficit hyperactivity disorder	31	21 -31	26.9	86.85	0.9
	Combined	**121**	**87 -119**	**102.1**	**84.42**	**7.33**

Figure 4.3.3 Aspect wise post-test knowledge score on learning disabilities in school children among teachers teaching 6-12 years children.



The above table 4.3.3 and figure 4.3.3 depicts the result of aspect wise the post-test mean knowledge score on learning disabilities among teachers after self instructional module.

The mean, mean score percentage, standard deviation were explicated and displayed based on maximum possible score of each area after self instructional module.

The post-test mean knowledge score on general knowledge regarding learning disabilities was 20.02 with standard deviation 3.27%. , 20.35 mean score knowledge with standard deviation 1.73% regarding reading disorders, 16.95 mean score knowledge with standard deviation 1.92% regarding writing disorder, 17.67 mean score knowledge with standard deviation 1.69%

regarding mathematic disorder and 26.9 mean score knowledge with standard deviation 0.9% regarding attention deficit hyperactivity disorder .

The post-test knowledge mean score percentage 80.1% regarding general knowledge on learning disabilities, 84.79% regarding reading disorders, 84.75% regarding writing disorders, 84.16% regarding mathematic disorders and 86.85% regarding attention deficit hyperactivity disorder were observed after self instructional module.

SECTION IV

COMPARISON OF KNOWLEDGE LEVEL REGARDING LEARNING DISABILITIES OF SCHOOL CHILDREN AMONG TEACHERS TEACHING 6-12 YEARS CHILDREN BEFORE AND AFTER SELF INSTRUCTIONAL MODULE.

Table 4.4 1.Pre-test and post-test knowledge level regarding learning disabilities of school age children among teachers teaching 6-12 years of children

KNOWLEDGE LEVEL	RESPONDENTS KNOWLEDGE LEVEL			
	PRE-TEST		POST-TEST	
	NUMBER	PERCENTAGE (%)	NUMBER	PERCENTAGE (%)
Adequate	0	0	37	92.5
Moderate	2	5%	3	7.5
Inadequate	38	95%	0	0
Total	**40**	**100**	**40**	**100**

Figure 4.4.1 Pre-test and post-test knowledge level regarding learning disabilities of school age children among teachers teaching 6-12 years children.

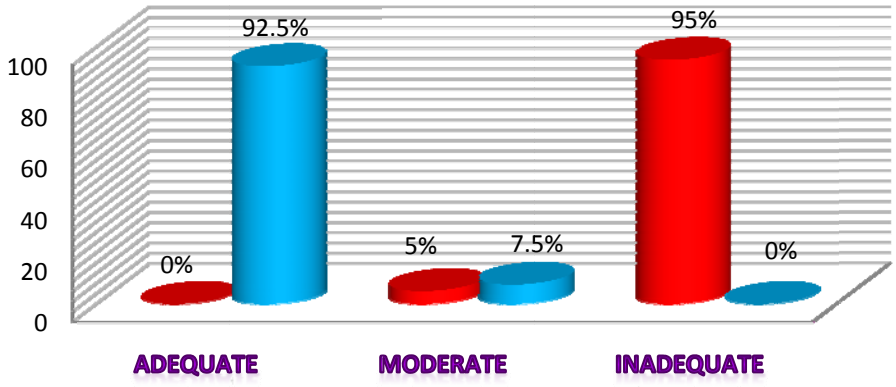


Table 4.4.1.and figure 4.4.1 shows that the comparison of value of pre-test and post test knowledge level. In the pre-test 38 (95.5%) respondents were belong to inadequate level of knowledge, 2(0.5%) respondents were belong to moderate level of knowledge and none of them have adequate knowledge level.

In post test 37 (92.5%) respondents were belong to adequate level of knowledge, 3(7.5%) respondents were belong to moderate level of knowledge and none of the teachers belong to inadequate knowledge level.

Examining the effectiveness of self instructional module and testing of the hypothesis

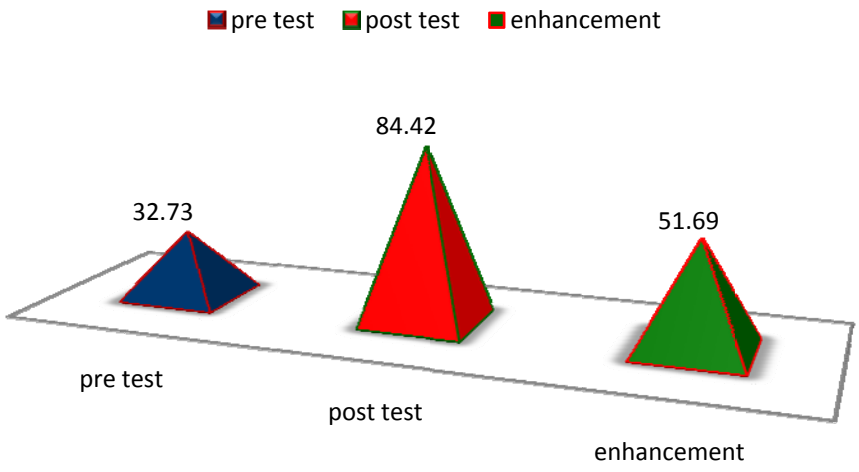
In order to determine the effectiveness of self instructional module, following research hypothesis was formulated:

H-1: The mean post-test knowledge score of the subjects after self instructional module with regard to pre-test knowledge score before self instructional module will be significantly higher.

Table 4.4.2. Pre-test and post-test mean knowledge score regarding learning disabilities of school age children among teachers teaching 6-12 years children.

ASPECT	MAX. SCORE	RANGE SCORE	RESPONDENTS KNOWLEDGE			PAIRED 't' TEST
			MEAN	MEAN%	SD%	
Pre-test	121	32 -71	39.6	32.73	9.59	
Post-test	121	87 –119	102.1	84.42	7.33	34.6
Enhancement	**121**	**55 -48**	**62.55**	**51.69**	**2.26**	

Figure 4.4.2. Pre-test and post-test mean knowledge score regarding learning disabilities of school children among teachers teaching 6-12 years children.



Significance at 5% level, t (0.05, 39df) =2.021

Table 4.4.2 and figure 4.4.2 indicates the pre-test knowledge score on learning disabilities was 39.6 with standard deviation 9.59%, where as in the post-test mean knowledge score was 102.1 with standard deviation 7.33%. It reveals that the post test mean knowledge score were found higher than the pre-test knowledge score.

The statistical paired‘t’ test implies that the difference in the pre-test and post-test score were found statistically significant at 5% level $p<0.05$. Further, the mean enhancement score was 51.69 with standard deviation 2.26%.

The paired‘t’ test value 34.6 reveals that there exist a statistical significance in the enhancement score indicating the impact of effectiveness of self instructional module among the respondents.

Table 4.4.3 aspect wise Pre-test and post-test knowledge score on learning disabilities of school children among teachers teaching 6-12 years children.

ASPECT	MAX SCORE	RESPONDENTS KNOWLEDGE						PAIRED 't' test
		PRE-TEST		POST-TEST		ENHANCEMENT		
		MEAN%	SD%	MEAN %	SD %	MEAN %	SD%	
General knowledge of learning disabilities	25	29.88	2.41	8.01	3.27	50.22	0.86	25.59
Reading disorders	24	34.16	1.72	84.79	1.73	50.63	0.01	30.95
Writing disorder	20	35.25	1.81	84.75	1.92	49.5	0.11	23.36
Mathematic disorder	21	33.57	2.59	84.16	1.69	50.59	0.9	21.54
Attention deficit hyperactivity disorder	31	31.77	2.71	86.85	0.90	54.38	1.81	27.61
combined	**121**	**32.73**	**9.59**	**84.42**	**7.33**	**51.65**	**2.26**	**34.6**

***Significant at 5% level, t(0.05, 39 df) = 2.0**

Figure 4.4.3 aspect wise Pre-test and post-test knowledge score on learning disabilities of school children among teachers teaching 6-12 years children

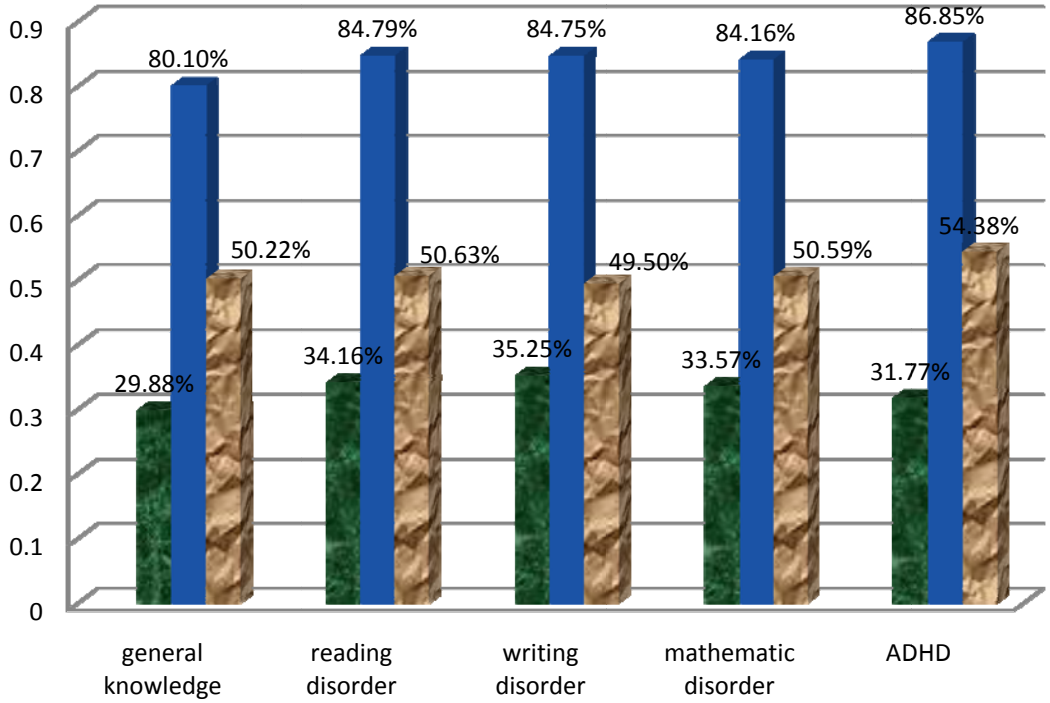


Table 4.4.3 and figure 4.4.3 depicts the aspect wise mean knowledge score percentage of pre-test and post-test. In the aspect of general knowledge on learning disabilities the pre-test mean score percentage was 29.88% and post-test mean score percentage was 80.1% with enhancement knowledge by 50.22%.

Regarding reading disorder, the pre-test mean knowledge score percentage was 34.16% and post-test mean knowledge score percentage was

84.79% with enhancement by 50.63%. Regarding writing disorder pre-test mean knowledge score percentage was 35.25% and post-test mean knowledge score percentage was 84.75% with enhancement by 49.5%.

Regarding mathematic disorder pre-test mean knowledge score percentage was 33.57% and post-test mean knowledge score percentage was 84.16% with enhancement by 50.59%.

Regarding attention deficit hyperactivity disorder, the pre-test mean knowledge score percentage was 31.77% and post-test mean knowledge score percentage was 86.85% with enhancement by 54.38%.

The statistical paired‘t’ test indicate that the enhancement in the mean knowledge scores percentage were found to be significant ($p<0.05$), revealing the effectiveness of self instructional module for all the aspect.

Table 4.4.4 outcome of paired‘t’ test analysis

SL.NO	VARIABLES	DIFFERENCES IN MEANS	T- VALUE	df	P-VALUE
1	KNOWLEDGE	51.65	34.6	39	0.05

In the view of interfering the statistical significance of increase in the knowledge of teachers regarding learning disabilities, the paired‘t’ test was

workout to compare the pre-test and post-test knowledge level. The statistical hypothesis was postulated. The differences in mean score of pre-test and post-test knowledge score was observed to be 51.65 which was statistically significant [t-value = 34.6*, df =39] at .05 level, i.e. highly significant. It implies the effectiveness of self instructional module in gaining knowledge on learning disabilities in school children among teachers. Thereby, the research hypothesis **H-1** is accepted.

SECTION V

ASSOCIATION BETWEEN PRE-TEST KNOWLEDGE AND SOCIO-DEMOGRAPHIC VARIABLES OF TEACHER

In this section the researcher is interested to bring out association between knowledge of teachers teaching 6-12 years children and demographic variables such as age, sex, religion, marital status, education, year of experience, previous knowledge, previous exposure, in-service education, duration of in-service education.

In order to determine the association chi-square analysis was used and the following hypothesis was formulated.

H-2: There will be significant association between pre-test knowledge and demographic variables such as previous exposure, years of experience, in-service education and duration of in-service education

Table.4.5.1. Association between pre-test knowledge and socio-demographic variables of teacher

SL.NO	VARIABLE	CATEGORY	KNOWLEDGE				df	χ^2
			INADEQUATE		MODERATE			
			NO	%	NO	%		
1	Age	<30 years	18	47.3	1	50	1	0.05
		>30 year	20	52.7	1	50		
2	Sex	Male	5	13.1	0	0	1	1.29
		Female	33	86.8	2	100		
3	Religion	Hindu	32	84.2	2	100	1	0.29
		Others	6	15.7	0	0		
4	Marital status	Married	26	68.5	1	50	1	1.01
		Unmarried	12	31.5	1	50		
5	Education	PG with B.Ed	16	42.1	2	100	1	1.40
		Others	22	57.8	0	0		
6	Years of experience	<5 years	29	76.3	0	0	1	5.52*
		>5 years	9	23.6	2	100		
7	Previous knowledge	Yes	34	89.5	2	100	1	2.23
		No	4	10.5	0	0		
8	Previous exposure	Yes	10	31.6	2	100	1	4.84*
		No	28	68.4	0	0		
9	In-service education	Yes	13	34.2	2	100	1	5.08*
		No	25	65.8	0	0		
10	Duration of programme	< 2 days	3	23.07	1	50	1	1.12
		>2 days	10	76.92	1	50		

*** Significant at 5% level t (0.05,1df) =3.84**

The table 4.5.1 presents the substantive summary of chi- square analysis. It was used to find out the relationship between the pre-test knowledge score and socio-demographic variables such as age, sex, religion, marital status, education, year of experience, previous knowledge, previous exposure, in-service education, and duration of in-service education.

The variables such as previous exposure, years of experience and in-service education were significantly associated with pre-test knowledge score. Other socio-demographic such as age, sex, religion, marital status, education, previous knowledge and duration of education were not significantly associated with per-test knowledge. Hence the research hypothesis H-2 is accepted.

The teachers teaching 6-12 years children who were in the age below 30, 18 (47.3%) had inadequate knowledge and 1(50%) had moderate knowledge. Subjects who were in the age above 30, 20 (52.7%) had inadequate knowledge and 1 (50%) had moderate knowledge. The chi-square test value for association between age and pre-test knowledge level was 0.05 which is insignificant chi-square [P, 0.05, 1df] =3.84. It is inferred that there is no significant association between age and pre-test knowledge level.

The subjects who were males, 5 (13.1%) had inadequate knowledge and no one had moderate knowledge. The subjects who were females, 33 (86.8%)

had inadequate knowledge and 2 (100%) had moderate knowledge. The chi-square test value for association between sex and pre-test knowledge level was 1.29 which is insignificant chi-square [P, 0.05,1 df] =3.84. It is inferred that there is no significant association between sex and pre-test knowledge level.

The subjects who were Hindus 32 (84.2%) had inadequate knowledge and 2 (100%) had moderate knowledge. The subjects who were other religions 6 (15.7%) had inadequate knowledge and no one had moderate knowledge. The chi-square test value for association between religion and pre-test knowledge level was 0.29 which is insignificant chi-square [P, 0.05,1df] =3.84. It is inferred that there is no significant association between religion and pre-test knowledge level.

The subjects who were married 26 (68.5%) had inadequate knowledge and 1 (50%) had moderate knowledge. The subjects who were unmarried 12 (31.5%) had inadequate knowledge and 1 (50%) had moderate knowledge. The chi-square test value for association between marital status and pre-test knowledge level was 0.01, which is insignificant chi-square [P, 0.05,1 df] =3.84. it is inferred that there is no significant association between marital status and pre-test knowledge level.

The subjects who were completed PG with B.Ed 16 (42.1%) had inadequate knowledge and no one had moderate knowledge. The subjects who were completed other courses 22 (57.8%) had inadequate knowledge and 2 (100%) had moderate knowledge. The chi-square test value for association between educational qualification and pre-test knowledge level was 1.40, which is insignificant chi-square [P, 0.05,1 df] =3.84. It is inferred that there is no significant association between educational qualification and pre-test knowledge level.

The subjects who had below 5 years of experience 29 (76.3%) had inadequate knowledge and no one had moderate knowledge. The subjects who had above 5 years of experience 9 (23.6%) had inadequate knowledge and 2 (100%) had moderate knowledge. The chi-square test value for association between years of experience and pre-test knowledge level was 5.52, which is significant chi-square [P, 0.05,1 df] =3.84. It is inferred that there is significant association between educational qualification and pre-test knowledge level.

The subjects who had previous knowledge 34 (89.5%) had inadequate knowledge and 2 (100%) had moderate knowledge. The subjects who did not have previous knowledge 4 (10.5%) had inadequate knowledge and no one had moderate knowledge. The chi-square test value for association between previous knowledge and pre-test knowledge level was 2.23, which is

insignificant chi-square [P, 0.05,1 df] =3.84. It is inferred that there is no significant association between previous knowledge and pre-test knowledge level.

The subjects who had previous exposure 10 (31.6%) had inadequate knowledge and 2 (100%) had moderate knowledge. The subjects who did not have previous exposure 28 (68.4%) had inadequate knowledge and no one had moderate knowledge. The chi-square test value for association between previous exposure and pre-test knowledge level was 4.84, which is significant chi-square [P, 0.05,1 df] =3.84. It is inferred that there is significant association between previous exposure and pre-test knowledge level.

The subjects who were attended in-service education 13 (34.2%) had inadequate knowledge and 2 (100%) had moderate knowledge. The subjects who were not attended in-service education 25 (65.8%) had inadequate knowledge and no one had moderate knowledge. The chi-square test value for association between in-service education and pre-test knowledge level was 5.08, which is significant chi-square [P, 0.05,1 df] =3.84. It is inferred that there is no significant association between in-service education and pre-test knowledge level.

The subjects who were attended less than two days in-service educational programme, 3 (23.07%) had inadequate knowledge and 1 (50%) had moderate knowledge. The subjects who were attended more than days in-service educational programme 10 (76.92%) had inadequate knowledge and 1 (50%) had moderate knowledge. The chi-square test value for association between duration of in-service educational programme and pre-test knowledge level was 1.12, which is insignificant chi-square [p, 0.05,1 df] =3.84. It is inferred that there is no significant association between duration of in-service educational programme and pre-test knowledge level.

DISCUSSION

The basic purpose of the present study was to evaluate the effectiveness of self instructional module on learning disabilities among teachers and to find out the relationship between pre-test knowledge levels with selected demographic variables.

The discussion is formulated in the basis of objectives of the research and is explained under the following headings:

- Demographic variables
- Analysis of effectiveness of self instructional module
- Association between demographic variables and pre-test knowledge

Demographic variables

- Among 40 teachers 19 (47.5%) were in the age below 30 years and 21 (52.5%) in the age above 30 years.
- Majority of the subjects 35 (87.5%) were females and 5(12.5%) were males.
- Out of 40 teachers 34 (85%) were Hindus and 6 (15%) were other religions.
- In this study 27 (67.5%) were married and 13(32.5%) were unmarried.
- Among 40 teachers 16 (40%) were completed PG with B.Ed and 24 (60%) were completed +2 with teacher training, UG with teacher training and PG with M.Ed and other courses.
- This study shows that 29 (72.5%) subjects had less than 5 years of experience and 11 (27.5%) had more than 5 years of experience.
- The majority 36 (90%) subjects had previous knowledge and 4(10%) did not have previous knowledge about learning disabilities.
- Out of 40 teachers, only 12(30%) were exposed to learning disabilities and majority 28 (70%) were not exposed to learning disabilities.
- 15 (37.5%) were attended in-service education whereas 25(62.5%) were not attended in-service education.
- Out of 15 had attended in-service education 4(26.6%) were attended

less than two days programme and 11 (77.3%) were attended more than two days programme.

Analysis of effectiveness of self instructional module

The pre-test result shows that 38 (95%) of respondents had inadequate level of knowledge, 2(5%) had moderate level of knowledge and none of them had adequate knowledge level. In the post-test 37 (92.5%) had adequate level of knowledge, 3(7.5%) had moderate level of knowledge and none of the teachers had inadequate knowledge level.

The pre- test mean knowledge score percentage was 32.73%. The post-test mean knowledge score percentage was 84.42%. The post-test mean knowledge score percentage was higher than pre-test knowledge score percentage. Self instructional module increased the knowledge of teachers regarding learning disabilities.

The paired‘t’ test was highly significant t= 34.6 ($p<0.05$) ie the intervention was very much effective in increasing knowledge of teachers.

Association between demographic variables and pre-test knowledge

The pre-test knowledge and demographic variables such as previous exposure, years of experience and in-service education were significantly

associated. Other socio-demographic such as age, sex, religion, marital status, education, previous knowledge and duration of in-service education were not significantly associated with pre-test knowledge.

Summary

This chapter dealt with the analysis and interpretation of collected data from 40 teachers teaching 6 – 12 years children in Vivekananda Matriculation School.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSION, NURSING IMPLICATIONS AND RECOMMENDATIONS.

This chapter deals with summary of the study, findings and conclusion. Implication of self instructional module for improving knowledge is stated. Explanation regard to objectives and findings are presented briefly followed by recommendations.

SUMMARY OF THE STUDY

The primary aim of the study is to evaluate the effectiveness of self instructional module on learning disabilities among teachers.

OBJECTIVES OF THE STUDY

- To assess the knowledge of school teachers regarding learning disabilities of school children.
- To administer self instruction module regarding learning disabilities.
- To assess the post test score after self instructional module.
- To compare pre-test and post-test score
- To find out the relationship between pre-test score knowledge score with selected socio-demographic variables such as age, sex, religion, marital

status, education, year of experience, previous knowledge, previous exposure, exposure to in-service education and duration of in-service education.

RESEARCH HYPOTHESIS

H_1 The mean post-test knowledge of subjects after the administration self instructional module with regard to knowledge on learning disabilities will be higher than their pre-test score.

H_2 There will be significant relationship between selected demographic variables and knowledge level of teachers regarding learning disabilities of school children.

Based on review of literature and guidance from various experts, the investigator developed conceptual framework, methodology and data analysis plan in effective and efficient way. The conceptual framework adopted for the study is based on Stuffle Beam's evaluation model. It provides comprehensive systematic and continuous ongoing framework for programme evaluation.

Quasi- experimental research design with one group pre-test post-test design was adopted for this study. As sample, 40 teachers were selected from Vivekananda Matriculation School at Elayampalayam, Tiruchengode, Namakkal District.

The instrument developed and used for the study was semi-structured questionnaire which comprised of section A and section B. Section A consist of 10 items related to demographic variables and section B consist of 7 questions related to general knowledge of learning disabilities, 7 questions related to reading disorders, 6 questions related to writing disorders, 6 questions related to mathematic disorders and 9 questions related to attention deficit hyperactivity disorder.

On the basis of expert's judgment the content validity of the tool was established.

The self instructional module was formulated by expert's opinion. It consists of definition, causes, signs and symptoms and how to identify and manage different type of learning disabilities. It was prepared to improve the knowledge of teachers regarding learning disabilities.

For conducting pilot study, the investigator administered semi-structured questionnaire to teachers working in Little Flower School, Karattupalayam. The reliability of the tool was r= .99 established by spit half method. The instruments were found to be reliable and feasible. The study was conducted in the month of September. The purpose of the study was:

- To find out the feasibility of conducting final study.

- To determine the method of statistical analysis.
- To test tool

The final study was conducted on October. By convenience sampling technique 40 teachers were selected from Vivekananda Matriculation School at Elayampalayam. Pre-test was conducted to assess the knowledge regarding learning disabilities and self instructional module was given. After 7 days of self instructional module post-test was conducted to assess the effectiveness of self instructional module.

The data collected were analyzed and interpreted on the basis of objectives by using descriptive and inferential statistics.

MAJOR FINDINGS OF THE STUDY

The major findings of the study are summarized as follows;

Findings related to demographic variables

- Among 40 teachers 19(47.5%) were in the age under 30 years and 21(52.5%) were in the age above 30 years.
- Majority of subjects 35(87.5%) were females and 5(12.5%) were males.
- Out of 40 teachers 34 (85%) were Hindus and 6(15%) were other religions.
- In this study 27 (67.5%) were and 13(32.5%) were unmarried.

- Among 40 teachers 16 (40%) were completed PG with B.Ed and 24 (60%) were completed +2 with teacher training, UG with teacher training and PG with M.Ed and other courses.
- This study shows that 29 (72.5%) subjects had less than 5 years of experience and 11 (27.5%) had more than 5 years of experience.
- The majority 36 (90%) subjects had previous knowledge and 4(10%) unaware about learning disabilities.
- Out of 40 teachers, only 12(30%) were exposed to learning disabilities and majority 28 (70%) were not exposed to learning disabilities.
- 15 (37.5%) were attended in-service education whereas 25(62.5%) were not attended in-service education.
- Out of 15 had attended in-service education 4(26.6%) were attended less than two days programme and 11 (77.3%) were attended more than two days programme.

Findings related to effectiveness of self instructional module

The pre-test result shows that 38 (95%) of respondents had inadequate level of knowledge, 2(5%) had moderate level of knowledge and none of them had adequate knowledge level. In the post-test 37 (92.5%) had adequate level of knowledge, 3(7.5%) had moderate level of knowledge and none of the teachers had inadequate knowledge level.

The pre- test mean knowledge score percentage was 32.73%. The post-test mean knowledge score percentage was 84.42%. The post-test mean knowledge score percentage was higher than pre-test knowledge score percentage. It includes that the knowledge of teachers regarding learning disabilities were improved after administration of self instructional module.

The paired‘t’ test analysis of pre-test and post-test knowledge ($t= 34.6$ $p<0.05$) was highly significant. The result evidently supports the effectiveness of self instructional module.

Findings related to relation between socio-demographic variables and pre-test knowledge

The present study revealed that there was association between pre-test knowledge and demographic variables such as year of experience, previous exposure, and exposure to in-service education. But there was no association between per-test knowledge and variables such as age, sex, religion, marital status, education, previous knowledge and duration of in-service education.

CONCLUSION

The conclusion was drawn from the findings of the study. The teachers had inadequate knowledge regarding learning disabilities in the pre-test. The knowledge of the teachers was assessed by post-test after

administration of self instructional module. The result showed that the administration of self instructional module was effective in improving the knowledge of teachers regarding learning disabilities.

NURSING IMPLICATION

The study of the findings have implication in different aspect of nursing profession that is nursing service, nursing education, nursing administration and nursing research.

Nursing service

Nursing practice is focusing on preventive aspect than the curative aspect. So community health practioners are more appropriate personnel to improve the health of the public through the community health service. School health service is an important part of the community health service which helps the teachers become aware about learning disabilities. Community health nurse can educate the teachers regarding learning disabilities and improve their ability to identify and manage the children with learning disabilities. Participation in the regular school health programme will be essential for improving their knowledge about learning disabilities.

Nursing education

- In-service education, workshop, discussion, seminar, skill training programme for identifying children with learning disabilities are some of the effective measures of increasing teachers participation in school health services.
- The teachers training curriculum should include the content on learning disabilities in school children and that should be implemented and reversed periodically to improve knowledge and skills required by the teachers in the area of learning disabilities.
- The department of education can be provided the information on “Learning disabilities in school children” for self learning of teachers. The booklet should comprise the pictorial explanation of causes, signs and symptoms and management, which is more effective and meaningful method of communication of information.

Nursing administration

Nursing personnel should have vital role in educating the teachers regarding learning disabilities in school children. During school visits the health personnel should inculcate their interest in teaching the teachers about learning disabilities. Every school should be facilitated with school health nurse, which helps to concentrate on the mental ability of the children. Primary care clinician

and psychologist also should be there to improve the mental capacity of the children by counseling and psychotherapy.

Nursing research

Nursing research has more scope in this area to improve teacher's knowledge in early identification of learning disabilities in school children and to find out the effectiveness of various teaching method for educating the teachers about learning disabilities. There is a need for extensive research in this area to identify the awareness of parents about learning disabilities. The findings of the study can be utilized to motivate further research in this area to identify the learning disabilities and various interventions to reduce the incidence of learning disabilities. Nurse researcher should be motivated to conduct more studies on learning disabilities among teachers in various settings.

RECOMMENDATIONS

- The can be replicated on large samples, thereby findings can be generalized to large population.
- A similar study can be conducted with a control group.
- A comparative study can be conducted in two different schools with similar setup.

- A descriptive study can be conducted among teachers regarding learning disabilities
- A similar study conducted using other teaching strategies.
- A study can be carried to assess the knowledge and attitude of parents regarding learning disabilities.
- A retrospective study can be conducted regarding causes of learning disabilities among teachers.

SUMMARY

This chapter dealt with the summary, findings, conclusion, implication and recommendations.

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APPENDIX - A

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY

From,

MRS. REENA NINAN

II YEAR M.SC NURSING

VIVEKANANDHA COLLEGE OF NURSING

ELAYAMPALAYAM

TIRUCHENGODE.

To

THE PRINCIPAL

VIVEKANANDHA MATRICULATION SCHOOL

ELAYAMPALAYAM

TIRUCHENGODE.

Sub: letter seeking permission to conduct the study.

I am Mrs. REENA NINAN II year M.Sc nursing students (Child Health Nursing), Vivekanandha College of Nursing, Elayampalayam. I have undertaken a thesis on the topic "A STUDY TO EVALUATE THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON LEARNING DISABILITIES IN SCHOOL CHILDREN (6-12 YEARS) AMONG TEACHERS IN A SELECTED SCHOOL AT ELAMPALAYAM, NAMAKKAL DISTRICT, TAMIL NADU."

OBJECTIVES OF THE STUDY

1. To assess the knowledge of school teachers regarding learning disabilities in school children.
2. To administer self instruction module regarding learning disabilities.
3. To assess the post test score after self instructional module.
4. To compare the pre-test and post-test score
5. To find out the relationship between pre-test knowledge score with selected socio-demographic variables such as age, sex, religion, marital status, education, year of experience, previous knowledge, previous exposure, exposure to in-service education and duration of in-service education.

I would request you to kindly grant me permission to conduct the study in your school and also issue necessary instruction to the teachers to extend their co-operation to undertake my study successfully.

Thanking you,

Place: Yours faithfully,

Date: REENA NINAN

APPENDIX - B

LETTER GRANTING PERMISSION TO CONDUCT THE STUDY

From,

THE PRINCIPAL

VIVEKANANDHA MATRICULATION SCHOOL

ELAYAMPALAYAM

TIRUCHENGODE.

Sub: permission to conduct study in Vivekanandha Matriculation School, Elayampalayam.

With reference to the above letter, it has been formed that Mrs. REENA NINAN, II year M.Sc nursing student (child health nursing), Vivekanandha College Of Nursing, Elayampalayam is allowed to conduct the study on the above stated topic in our school. In this regard the teachers of the Vivekanandha Matriculation School, Elayampalayam, have been directed to provide full help and co-operation in facilitating the study.

With Thanks,

Place: Yours sincerely,

Date: The principal

Vivekanandha Matriculation School

Elayampalayam

APPENDIX – C

LETTER SEEKING CONSENT FROM THE PARTICIPANTS

Dear participants,

I, Mrs. REENA NINAN, II year M.Sc nursing student, Vivekanandha College of Nursing, Elayampalayam, am interested to know more about knowledge of teachers on learning disabilities. The information which you are giving will be kept confidential and will be used only for this study. Please participate in this programme by answering my questions honestly and states your willingness to participate in this study.

Thanking you,

Name :

Signature :

CONSENT FROM THE PARTICIPANTS

I understand the purpose of this study and I am willing to participate in this study.

Signature:

APPENDIX – D

LETTER FOR VALIDATION OF THE TOOL

FROM

REENA NINAN

II YEAR M.SC (N),

VIVEKANANDHA COLLEGE OF NURSING,

ELAYAMPALAYAM,

NAMAKKAL DISTRICT

TO

THROUGH: Principal, Vivekanandha College Of Nursing, Elayampalayam, Namakkal District.

SUBJECT : **Request for the content validation of the tool.**

Respected Sir/ madam,

I, Reena Ninan, II year M.Sc nursing student, Vivekanandha College of Nursing, Elayampalayam, would have taken a project on "A STUDY TO EVALUATE THE EFECTIVENESS OF SELF INSTRUCTION MODULE REGARDING LEARNING DISABILITIES OF SCHOOL CHILDREN (6-12 years) AMONG TEACHERS IN SELEDTED SCHOOL AT ELAYAMPALAYAM, NAMAKKAL DISTRICT, TAMILNADU" to be submitted Dr. MGR Medical University as partial fulfillment for Master of Nursing Degree.

OBJECTIVES OF THE STUDY

1. To assess the knowledge of school teachers regarding learning disabilities in school children.
2. To administer self instruction module regarding learning disabilities.
3. To assess the post test score after self instructional module.
4. To compare the pre-test and post-test score
5. To find out the relationship between pre-test score knowledge score with selected socio demographic variables such as age, sex, religion, marital status, education, year of experience, previous knowledge, previous exposure, exposure to in-service education and duration of in-service education.

To achieve the above mentioned objectives I have prepared a self instructional module. I request you to kindly give your valuable opinion and suggestions. Kindly validate and certify the tool. Thanking you,

Place: Yours faithfully,

Date: REENA NINAN

Enclosure

1. Semi-structured questionnaire
2. Score key
3. Self- instructional module
4. Certificate of validation

APPENDIX - E

SECTION A

DEMOGRAPHIC DATA OF THE TEACHERS

Code No:

1. Age

    1.1 $\geq$ 25 years [ ]

    1.2. 26 – 30 years [ ]

    1.3. 31 – 35 years [ ]

    1.4. Above 36 years [ ]

2. Sex

    2.1. Female [ ]

    2.2. Male [ ]

3. Religion

    3.1. Hindu [ ]

    3.2. Christian [ ]

    3.3. Muslim [ ]

4. Marital status

    4.1. Married [ ]

    4.2. Unmarried [ ]

    4.3. Separated [ ]

4.4. Divorcee [ ]

5. Educational qualification

5.1. +2 with teacher training [ ]

5.2. UG with teacher training [ ]

5.3. PG with B.Ed [ ]

5.5. PG with M.Ed [ ]

5.6. Any other specify [ ]

6. Years of experience

6.1. < 1 year [ ]

6.2. 1 – 5 year [ ]

6.3. 6 -10 years [ ]

6.4 > 10 years [ ]

7. Did you have educational psychology in your teacher training curriculum?

7.1. Yes [ ]

7.2. No [ ]

8. Have you come across any chid with learning disability?

8.1. Yes [ ]

8.2. No [ ]

If yes, what type of learning disability?

---

9. Have you attended in-service education regarding learning disabilities?

9.1. Yes [ ]

9.2. No [ ]

If yes, who organized the programme?

---

10. What was the duration of the programme?

10.1. One day

[ ]

10.2. Two days [ ]

10.3. Three days [ ]

10.4. One week [ ]

SECTION B

KNOWLEDGE REGARDING LEARNING DISABILITIES

11. What is learning disability?

    11.1. Difficulty in reading [ ]

    11.2. Difficulty in writing [ ]

    11.3. Difficulty in mathematics [ ]

12. Which sex is more affected with learning disability?

    12.1. Boys [ ]

    12.2. Girls [ ]

13. Which age children are affected more with learning disability?

    13.1. 1 – 6years [ ]

    13.2. 6 -12 years [ ]

    13.3. 12 -18 years [ ]

14. What are the causes of learning disabilities?

    14.1. Head injury [ ]

    14.2. Poor intake of food [ ]

    14.3. Exposure to toxic substances [ ]

    14.4. Radiation therapy to skull [ ]

15. What are the ante natal factors causes learning disabilities?

15.1. Alcohol use during pregnancy [ ]

15.2. Tobacco use during pregnancy [ ]

15.3. Low birth weight [ ]

15.4. Anaemia to mother during pregnancy [ ]

16. What are the common signs and symptoms of learning disabilities?

16.1. Poor understanding of concepts [ ]

16.2. Lack of attention [ ]

16.3. Developmental delay [ ]

16.4. Hyperactivity [ ]

17. What is reading disorder?

17.1. Difficulty in reading [ ]

17.2. Difficulty in understanding material with in a reading [ ]

17.3. Problem with their sound [ ]

18. Which gender is more affected with reading disorder?

18.1. Girls [ ]

18.2. Boys [ ]

19. What are the causes of reading disorder?

9.1. Heredity [ ]

9.2. Speech and hearing impairment [ ]

9.3. Parent with low reading level [ ]

9.4. Lack of familiarity with words [ ]

20. What are the features of reading disorder?

10.1. Very slow oral reading [ ]

10.2. Many mistakes in oral reading [ ]

10.3. Poor recognition of written words [ ]

10.4. Very poor comprehension of what has been read [ ]

21. How to identify the children with reading disorders?

21.1. Assessment of family history [ ]

21.2. Classroom observation [ ]

21.3. Testing the reading capability [ ]

21.4. Testing the intellectual ability [ ]

22. What are the problems expected in a child with reading disorder?

22.1. Students may become frustrated with school work [ ]

22.2. Students can have a Low self esteem [ ]

22.3. Child cannot express their feelings [ ]

22.4. Child cannot understand others [ ]

23. How to manage the children with reading disorder?

23.1. Give student extra time to complete the school assignments [ ]

23.2. Continuous reading practice [ ]

23.3. Provide positive and corrective feedback [ ]

23.4. Ask the child to imitate reading of teacher and student model [ ]

24. What is writing disorder?

24.1. Errors in grammar and punctuation [ ]

24.2. Poor spelling [ ]

24.3. Child is having poor hand writing [ ]

25. Which gender is more affected with writing disorder?

25.1. Boys [ ]

25.2. Girls [ ]

26. What are the causes of writing disorder?

26.1. Heredity [ ]

26.2. Visual impairment [ ]

26.3. Low level mental activity [ ]

26.4. Lack of fine motor control [ ]

27. What are the features of writing disorder?

27.1. poor hand writing [ ]

27.2. pain when writing [ ]

27.3. many spelling mistakes [ ]

27.4. unfinished letters [ ]

28. How to identify the children with writing disorder?

28.1. Assessment of family history [ ]

28.2. Expressive written test [ ]

28.3. Physical assessment [ ]

28.4. Testing the intellectual ability [ ]

29. How to manage the children child with writing disorder?

29.1. Repetitional coaching spelling aspect [ ]

29.2. Periodical screening of vision voice and hearing [ ]

29.3. Teach proper figuring of letters [ ]

29.4. Support child’s hand and provide them cue direction [ ]

30. What is mathematical disorder?

30.1. Difficulty learning and remembering numerals [ ]

30.2. Inability to perform calculation [ ]

30.3. Difficulty aligning numbers in order to calculation [ ]

30.4. Difficulty in understanding mathematical terms [ ]

31. Which gender is more affected with mathematic disorder?

31.1. Girls [ ]

31.2. Boys [ ]

32. What are the causes of mathematic disorder?

32.1. Genetic disorder [ ]

32.2. Brain injury [ ]

32.3. Visual deficit [ ]

32.4. Deficit in memory [ ]

33. What are the features of mathematic disorder?

33.1. Problem with counting [ ]

33.2. Difficulty memorizing multiplication table [ ]

33.3. Inability to understand mathematical symbols [ ]

33.4. Confusion with math operations [ ]

34. How to identify the children with mathematic disorder?

34.1. Testing the intellectual ability [ ]

34.2. Screening for vision [ ]

34.3. Testing the memory [ ]

34.4. Observing the educational achievement [ ]

35. How to manage the children with mathematic disorder?

35.1. Identification of problems as early as possible [ ]

35.2. Continuous practice in solving math problems [ ]

35.3. Use flash card and work book for treatment [ ]

35.4. Use of hand on instruction than theoretical instruction [ ]

36. What is attention deficit hyperactivity disorder?

36.1. Decreased level of attention [ ]

36.2. Increased activity [ ]

36.3. Sudden uncontrollable act [ ]

36.4. Motor restlessness [ ]

37. Which gender is more affected with attention deficit hyperactivity disorder?

37.1. Boys [ ]

37.2. Girls [ ]

38. Which age children are affected with attention deficit hyperactivity disorder?

38.1. Up to 7 years [ ]

38.2. 7 – 12 years [ ]

38.3. 12 -14 years [ ]

39. What are the common causes of attention deficit hyperactivity disorder?

39.1. Prematurity [ ]

39.2. Brain injury [ ]

39.3. Lead poisoning [ ]

39.4. Alcohol and tobacco use during pregnancy [ ]

40. What are the physical factors of attention deficit hyperactivity disorder?

40.1. Trauma to brain [ ]

40.2. Brain tumour [ ]

40.3. Stroke [ ]

40.4. Diseases in brain [ ]

41. What are the parental factors of attention deficit hyper activity disorder?

41.1. Large numbers of siblings within the family [ ]

41.2. Single parenthood [ ]

41.3. Child neglect [ ]

41.4. Parental conflict [ ]

42. How to identify the children with attention deficit hyperactivity disorder?

42.1. Intelligence test [ ]

42.2. Hand eye coordination test [ ]

42.3. Measurement of auditory perception [ ]

42.4. Measurement of visual perception [ ]

42.5. Inattention, impulsivity and hyperactivity [ ]

43. How to manage the children with attention deficit hyperactivity disorder?

43.1. Behavioural modification [ ]

43.2. Avoidance of risk factors [ ]

43.3. Improve relationship with parents and siblings [ ]

43.4. Modification of physical environment [ ]

44. Who are the members involved in behavioural modification of a child with attention deficit disorder?

44.1. Psychologist [ ]

44.2. School person [ ]

44.3. Community mental health therapist [ ]

44.4. Primary care clinician [ ]

45. What are the roles of teachers in the management of learning disabilities?

45.1. Homework and classroom assignment may need to be reduce [ ]

45.2. Verbal instruction should be accompanied by visual reference [ ]

45.3. Classes limited to 6-8 children [ ]

45.4. Special attention to high risk child [ ]

45.5. Remedial education with special teacher [ ]

45.6. Early identification and detection of risk children [ ]

45.7. Periodical evaluation of visual, auditory or neurological status [ ]

45.8. Referral services [ ]

45.9. Counselling with parents and child [ ]

SCORE KEY

SL.NO	CORRECT RESPONSE	SCORE
11	11.1, 11.2, 11.3	3
12	12.1	1
13	13.1	1
14	14.1,1 4.2, 14.3, 14.4	4
15	15.1,1 5.2, 15.3,15.4	4
16	16.1, 16.2, 16.3, 16.4	4
17	17.1, 17.2,17.3	3
18	18.1	1
19	19.4, 19.2, 19.3, 19.4	4
20	20.1, 20.2, 20.3, 20.4	4
21	21.1, 21.2, 21.3, 21.4	4
22	22.1, 22.2, 22.3, 22.4	4
23	23.1, 23.2, 23.3, 23.4	4
24	24.1, 24.2, 24.3	3
25	25.1	1
26	26.1, 26.2, 26.3, 26.4	4
27	27.1, 27.2, 27.3, 27.4	4
28	28.1, 28.2, 28.3, 28.4	4
29	29.1, 29.2, 29.3, 29.4	4
30	30.1, 30.2, 30.3, 30.4	4
31	31.1	1

32	32.1, 32.2, 32.3, 32.4	4
33	33.1, 33.2, 33.3, 33.4	4
34	34.1, 34.2, 34.3, 34.4	4
35	35.1, 35.2, 35.3, 35.4	4
36	36.1, 36.2, 36.3, 36.4	4
37	37.1	1
38	38.1	1
39	39.1, 39.2, 39.3, 39.4	4
40	40.1, 40.2, .40.3, 40.4	4
41	41.1, 41.2, 41.3, 41.4	6
42	42.1, 42.2, 42.3, 42.4, 44.5	5
43	43.1, 43.2, 43.3, 43.4	4
44	44.1, 44.2, 44.3, 44.4	4
45	45.1, 45.2, 45.3, 45.445.6,45.7,45.8, 45.9	9
	Total	121

APPENDIX – F

EVALUATION CRITERIA CHECKLIST FOR VALIDATION OF TOOL

The expert is required to go through the content and give your opinion in the column given in the criteria table. If the tool is not meeting the criteria please give your valuable suggestions in the remark column.

SL.NO	CRITERIA	YES	NO	REMARKS
1	**Base line data** The items on the baseline data cover all aspect necessary for the study.			
2	**Semi structures interview schedule of knowledge regarding learning disabilities** a. Relevant to the topic of the study b. Content organization c. Language is easy and simple to understand d. Clarify of item used e. Any other suggestions			

APPENDIX- G

CERTIFICATE OF THE VAIDATION

This is to certify that the

Tool : semi structured interview schedule consists of two section which Includes

Section 1 : Socio demographic variables

Section 11 : Questions related to learning disabilities

Prepared by Mrs. REENA NINAN, IInd year M.Sc(N) student Vivekanandha College Of Nursing to used in her study title of **"A STUDY TO EVALUATE THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE REGARDING LEARNING DISABILITIES OF SCHOOL CHILDREN (6-12 years) AMONG SCHOOL TEACHERS IN A SELECTED SCHOOL AT ELAYAMPALAYAM, NAMAKKAL DISTRICT, TAMIL NADU"** has been validated by me.

Signature of Expert:

Place: Name:

Date: Designation:

APPENDIX-H

LEARNING DISABILITIES OF SCHOOL CHILDREN

INTRODUCTION

Learning disorders in a child or adolescent are characterized by academic unachievement in reading, writing expressions or mathematic in comparison with the overall intellectual ability of the child. Children with learning disorders often find it difficult to keep up with their peers in certain academic subjects, whereas they excel in others.

DEFINITION

Learning disability as a generic term refers to heterogeneous group of disorder manifested by significant difficulties in the acquisition and use of listening, speaking, writing, reasoning or mathematical abilities.

INCIDENCE

- Learning disabilities are seen in boys than girls.
- Learning disability is more prevalent in the age group of 6 – 12 years

ETIOLOGY

Heredity

Low birth weight and prematurity

✓ Tobacco and alcohol use during pregnancy

Drugs use during pregnancy

✓ Head injury

✓ Poor nutrition

✓ Lack of oxygen to foetus

✓ Exposure to toxic Substances

✓ Radiation therapy to skull

COMMON SIGNS AND SYMPTOMS OF LEARNING DISABILITY

- Hyperactivity

- Developmental delay

- Lack of attention

- Poor understanding of concepts

TYPES OF LEARNING DISABILITY

- Difficulty in reading
- Difficulty in writing
- Difficulty in mathematics

READING DISORDER

DEFINITION

Reading disorder is defined as reading achievement below the expected level for a child's age, education and intelligence, with the impairment interfering significantly with academic success or daily activities that involve reading.

INCIDENCE

Reading disorder is the most common learning disability and affects 2 – 8% of school age children. It is more in boys than girls.

ETIOLOGY

- Heredity

- Speech and hearing impairment

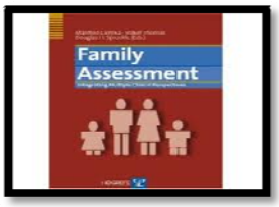
- Vocabulary deficit
- Parent with low reading level
- Memory impairment
- Lack of familiarity with words
- Problems during pregnancy
- Injury after birth

CLINICAL FEATURES

- Poor recognition of written words
- Very slow oral reading
- Many mistakes in oral reading
- Very poor comprehension of what has been read

HOW TO IDENTIFY READING DISORDER

- Family assessment



- Psycho educational testing
- Memory test
- Reading test

- Classroom observation

- Intelligence test

PROBLEMS OF CHILD WITH READING DISABILITY

✓ Individual might have problem expressing themselves

✓ Child cannot understand others as they have difficulty with language.

✓ Student may become frustrated with schoolwork.

✓ Student can have a lower self-esteem.

MANAGEMENT

❖ Provide different kinds of reading material, especially material they find interest

❖ Give extra time to complete school assignments.

❖ Aid with note taking by giving students a fill in the blank or structured outline.

❖ Help with oral testing and other assessments.

❖ Use books on tape and other assistive technology.

❖ Provide positive and corrective feedback.

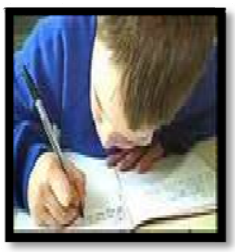
❖ Introduce important vocabulary before the student reads a section.

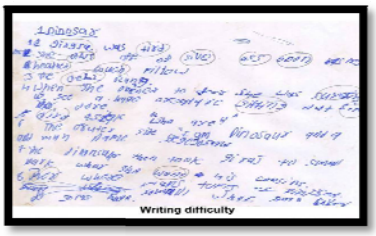
- ❖ Put daily assignments on the board as the earlier it is in the day,
- ❖ The easier time a dyslexic student seems to have.
- ❖ Try not to have extra information on the board.
- ❖ Leave assignments on the board for the entire day.
- ❖ Have student located close to the board.

WRITING DISORDER

DEFINITION

Writing disorder is learning disorder characterizes by poor spelling, error in grammar and punctuation and poor handwriting





INCIDENCE

It is estimated to occur in approximately 4% of school age children. It is occuring about three times as many boys.

ETIOLOGY

- Heredity
- Limited attention span
- Low level mental activity
- Reading disorder
- Visual impairment

- Lack of fine motor control

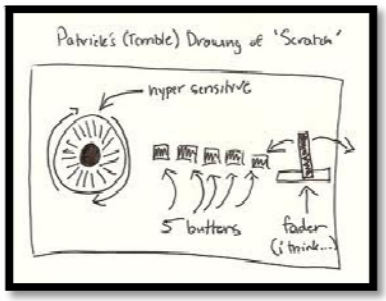
CLINICAL FEATURES

- o Poor paragraph organization
- o Grammatical errors

- Spelling errors

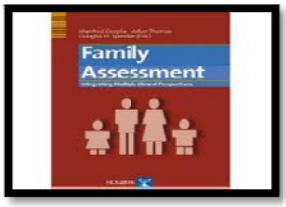
- Poorly formed letters or number

- Pain when writing
- Increased or decreased speed of writing
- Muscle spasm in arms and shoulder
- Poor handwriting and Poor drawing capabilities



HOW TO IDENTIFY WRITING DISORDER

- Family assessment



- Physical assessment

- Expressive written test

- Intelligence test

MANAGEMENT

Repetitional coaching spelling aspect

- Periodical screening of vision, voice and hearing
- Teach proper figuring of letter

- Treatment for motor disorder
- Encouraged the child while spelled correctly
- Support child's hand and provide them cue direction

- Muscle strengthening exercise

MATHEMATIC DISORDER

DEFINION

Mathematical disorders are refers to difficulty in learning and remembering numerals, cannot remember basic fact about numbers and are slow and inaccurate in computation

INCIDENCE

- It is estimated to occur in about 1% of school age children
- More occur in girl

ETILOGY

- Genetic disorder

- Neurological deficit

- Brain injury
- Visual deficit

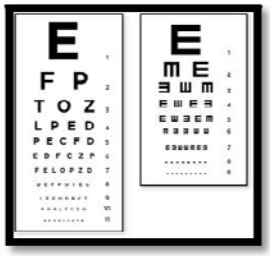
- Deficit in memory

CLINICAL FEATURES

- ❖ Problem with counting
- ❖ Difficulty memorizing multiplication table
- ❖ Many errors in simple arithmetic
- ❖ Slow in performing calculations
- ❖ Difficulty arranging numbers in order
- ❖ Inability to understand mathematical symbols
- ❖ Confusion with math operations
- ❖ Inability to graph information on graph
- ❖ Difficulty copying numbers and problems

HOW TO IDENTIFY MATHEMATIC DISORDER

- o Testing the intellectual ability
- o Screening for vision



- o Testing the memory
- o Observing the educational achievement

MANAGEMENT

- ➢ Identification of problems as early as possible

- Continuous practice in solving math problems
- Use flash card and work book for treatment
- Use of hand on instruction than theoretical instruction
- Remedial education with specialist teacher

ATTENTION DEFICIT HYPERACTIVITY DISORDER

DEFINITION

Attention deficit hyperactivity disorder refers to developmentally inappropriate degree of inattention, impulsiveness and hyperactivity.

INCIDENCE

- The symptoms must have been present before 7 years of age.
- Approximately 3 – 4 times more common in males than females.

ETIOLOGY

- Brain injury and tumours
- Prematurity

- Lead poisoning in children
- Alcohol and tobacco use during pregnancy

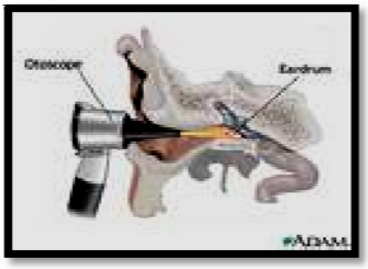
- Heredity
- Mental retardation
- Large family

- Single parenthood

- Child neglect
- Parental conflict

HOW TO IDENTIFY ATTENTION DEFICIT DISORDER

- Intelligence test
- Hand eye coordination test
- Measurement of auditory perception



- Measurement of visual perception
- Inattention, impulsivity and hyperactivity

MANAGEMENT

- ❖ Behavioural modification
- ❖ Avoidance of risk factors
- ❖ Improve relationship with parents and siblings
- ❖ Modification of physical environment
- ❖ family education

- ❖ counselling to the child

❖ medication

❖ Community mental health

❖ psychotherapy

❖ Primary care clinician

TEAM MEMBERS IN BEHAVIOURAL MODIFICATION OF A CHILD WITH ATTENTION DEFICIT DISORDER

❖ Psychologist

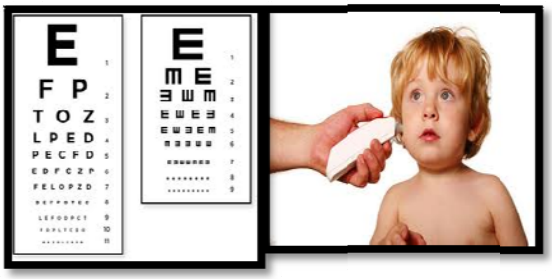
❖ School personnel

ROLE TEACHERS IN THE MANAGEMENT OF LEARNING DISABILITIES

- Homework and classroom assignment may need to be reduced
- Verbal instruction should be accompanied by visual reference
- Classes limited to 6-8 children Special attention to high risk child

- Remedial education with special teacher

- Early identification and detection of risk children
- Periodical evaluation of visual, auditory or neurological status



- Referral services
- Councelling with parent and child

CONCLUSOIN

Learning disorders are not a single homogeneous entity. Learning disability exists when there is a significant discrepancy among several areas of an individual's cognitive functioning. Widely accepted teaching practices such as perceptual training, modality preference, and diagnostic prescriptive teaching have been shown to be of limited effectiveness.